COPY FOR MR. J. ALLAN ROSS

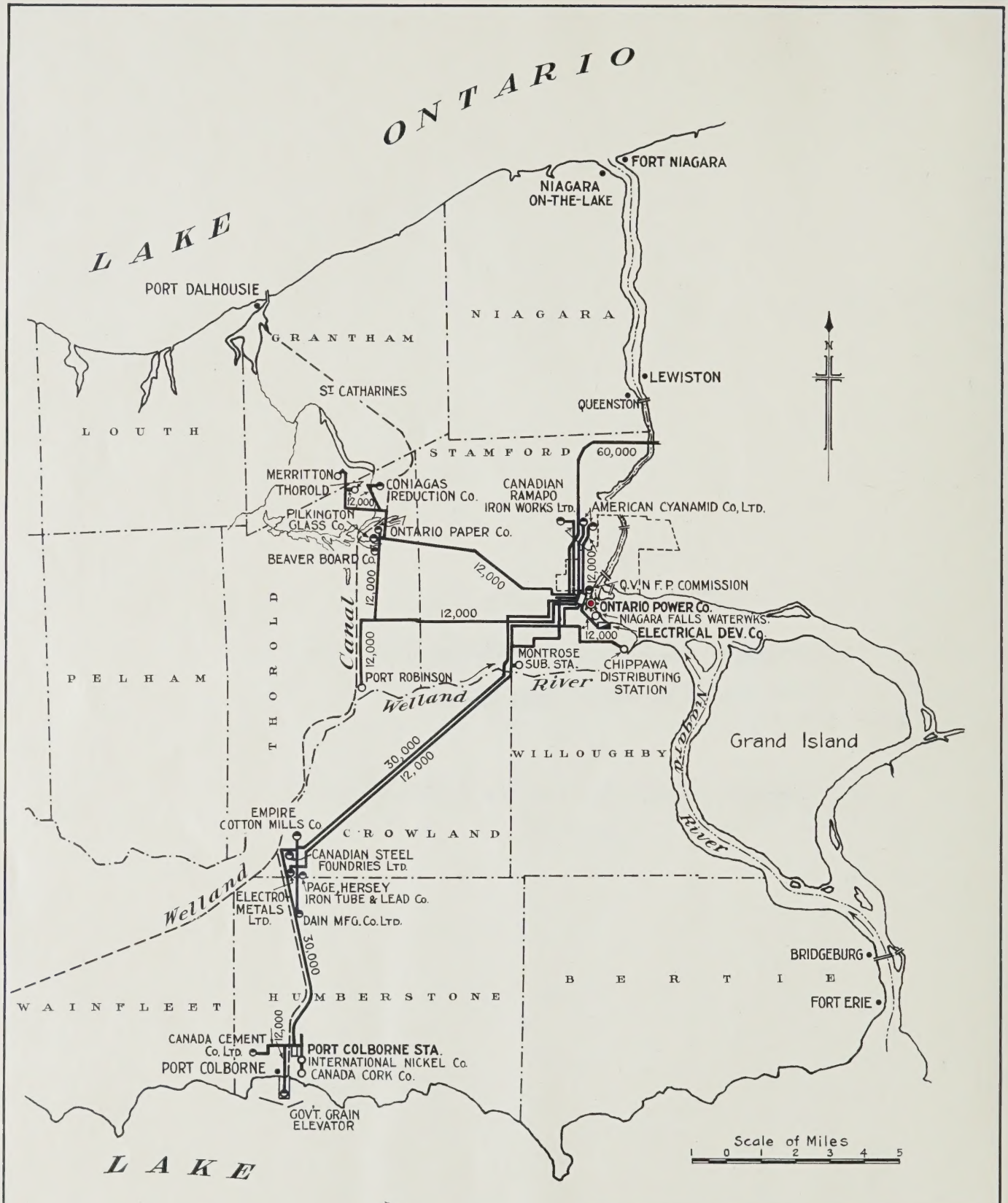
HYDRO-ELECTRIC INQUIRY COMMISSION

GENERAL REPORT

THE ONTARIO POWER COMPANY OF NIAGARA FALLS

JOSEPH H. W. BOWER
SECRETARY

The Ontario Power Company of Niagara Falls


ONTARIO
LAKE
FORT NIAGARA
NIAGARA ON-THE-LAKE
PORT DALHOUSIE
NIAGARA
GRANTHAM
ST CATHARINES
LEWISTON
QUEENSTON
LOUTH
STAMFORD
60,000
MERRITTON
THOROLD
CONIAGAS REDUCTION Co.
12,000
CANADIAN RAMAPO IRON WORKS LTD.
AMERICAN CYANAMID Co, LTD.
PILKINGTON GLASS Co.
ONTARIO PAPER Co.
BEAVER BOARD Co.
12,000
12,000
12,000
Q.V.N F.P. COMMISSION
ONTARIO POWER Co.
NIAGARA FALLS WATERWKS.
ELECTRICAL DEV. Co.
12,000
12,000
12,000
Canal
MONTROSE SUB. STA.
CHIPPAWA DISTRIBUTING STATION
PORT ROBINSON
Welland
River
PELHAM
THOROLD
WILLOUGHBY
Niagara
River
Grand Island
30,000
12,000
EMPIRE COTTON MILLS Co
CROWLAND
CANADIAN STEEL FOUNDRIES LTD.
PAGE, HERSEY IRON TUBE & LEAD Co.
ELECTRO METALS LTD.
DAIN MFG. Co. LTD.
Welland
30,000
BRIDGEBURG
BERTIE
FORT ERIE
WAINFLEET
HUMBERSTONE
12,000
CANADA CEMENT Co. LTD.
PORT COLBORNE STA.
INTERNATIONAL NICKEL Co.
PORT COLBORNE
CANADA CORK Co.
GOVT. GRAIN ELEVATOR
Scale of Miles
0 1 2 3 4 5
LAKE
ERIE
GENERATING STATION
HIGH TENSION TRANSFORMER STATIONS
LOW TENSION " " OWNED BY O.P. Co.
LOW TENSION " " OWNED BY CONSUMER
HIGH TENSION " " OWNED BY ELECTRICAL DEV. Co.
12,000 TRANSMISSION LINES AND VOLTAGE
HYDRO-ELECTRIC INQUIRY COMMISSION
W. D. GREGORY, CHAIRMAN
ECONOMICS OF H. E. P. C. DISTRIBUTION SYSTEMS
THE ONTARIO POWER COMPANY OF NIAGARA FALLS
(INCLUDING THE ONTARIO TRANSMISSION Co., LIMITED)
MAP SHOWING LOCATION OF GENERATING STATION, TRANSFORMER STATIONS AND TRANSMISSION LINES
Toronto, May 14th., 1923. Made by GCB., Checked by L.J.H.
WALTER J. FRANCIS & COMPANY
CONSULTING ENGINEERS

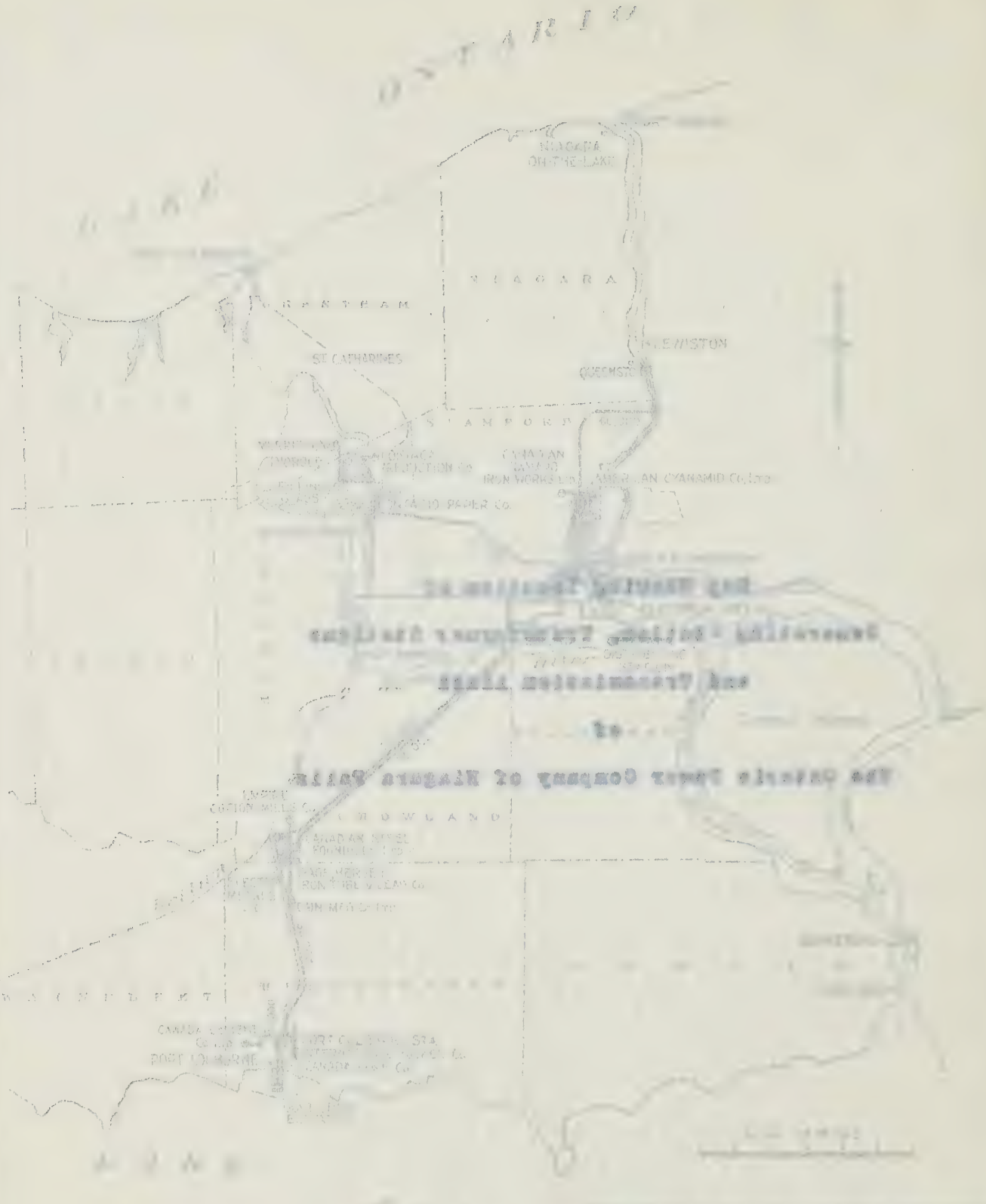
Map Showing Location of

Generating Station, Transformer Stations

and Transmission Lines

of

The Ontario Power Company of Niagara Falls



HYDRO-ELECTRIC POWER COMMISSION
OF ONTARIO

SUPPLIED BY H.E.P.C. ONTARIO'S SYSTEM
THE NIAGARA POWER COMPANY OF NIAGARA FALLS
(INCLUDING THE NIAGARA TRANSMISSION COMPANY)

SHOWING LOCATION OF
CONVERTERS, STEP DOWN TRANSFORMERS, SUBSTATIONS
AND TRANSMISSION LINES

DRAWN J. TRUDEAU & CHAMPION

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ON

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Toronto, Ontario,
June 20th, 1923.

Hydro-Electric Inquiry Commission
W. D. Gregory, Esq., Chairman,
Toronto, Ontario.

re: General Report
The Ontario Power Company of Niagara Falls.

Mr. Chairman and Gentlemen:-

In accordance with your instructions, a general report on The Ontario Power Company of Niagara Falls has been made, along the lines approved of by the Commission on January 2nd. The work has been done under my direct personal supervision as per your instructions.

The reports of Messrs. Price, Waterhouse & Company and Messrs. Clarkson, Gordon & Dilworth, together with the reports by the Commission's Consulting Engineer, Mr. Walter J. Francis, have been used in the preparation of this report, and in addition complete studies have been made of all evidence taken at the public hearing held in connection with the company.

The report falls naturally into two parts. The first part includes sections entitled "Historical Sketch", "Physical", "General Economics", and "General Relations". These sections are largely a recital of facts, but in addition a considerable amount of evidence has been quoted in order to fairly represent the claims and counter-claims made in connection with the contentious matters brought to the attention of the Commission. The second part of the report entitled "Summary" is merely intended to direct attention to those points which appear to require special consideration by the Commission.

All figures used in this report have been carefully checked by a representative of Messrs. Price, Waterhouse & Company. Evidence and reports forming the basis of this report are appended hereto, and in order to facilitate reference to the documents in question, on the right-hand margin of the report throughout will be found abbreviated references.

Yours very truly,

J. W. Dawson
Secretary

JWDB/C

Berlin, Unter den
Linden 6.
June 6th, 1923.

State-Electric Supply Commission
Z. D. Gregory, Esq., Chairman,
Toronto, Ont.-Can.

Re: General Report
The Ontario Power Commission of Toronto Falls.

Mr. Chairman and Gentlemen:-

In accordance with your instructions, a preliminary report on the Ontario Power Company of Niagara Falls has been made, along the lines suggested by the Commission on January last. The work has been done under my direct personal supervision as per your instructions.

The property of Messrs. Frid, Waterhouse & Company and Jenkins, Gordon & Silver, together with the report by the Commission's Technical Engineer, Mr. Walter J. Francis, have been used in the preparation of this report, and in addition complete studies have been made of all estimates at the public hearing held in connection with the enquiry.

The report falls naturally into two parts. The first part includes contents entitled "Historical Data", "Topical", "General Conclusions", and "General Recommendations". These portions are largely a review of facts, but in addition a considerable amount of criticism has been given in order to fairly represent the claims and counter-claims made in connection with the enormous amount brought to the attention of the Commission. The second part of the report entitled "Summary" is merely intended to direct attention to those points which appear to require special consideration by the Commission.

All figures used in this report have been carefully checked by a representative of Messrs. Ernst & Ernst. Briefness and terse English the basis of this report are apparent merits, and in order to facilitate reference the paragraphs in question, as the right-hand margin of the report intended will be found abbreviated headings.

Yours very truly,

[illegible]

THE ONTARIO POWER COMPANY OF NIAGARA FALLS

HISTORICAL SKETCH.

The Ontario Power Company of Niagara Falls was originally incorporated with an authorized capital of $250,000.00, by a special act of the Dominion of Canada, dated June 23rd, 1887. It appears that the company was instituted under the name of the Canadian Power Company, by Bankier Payne, who interested Oliver White of Buffalo in it, and later John Joseph Albright of Buffalo acquired control of the company. The change to the present name of the company was authorized by further act, dated July 10th, 1899, and by powers conferred by the Act of Incorporation the authorized capital stock was increased at different times to a total par value of $15,000,000, only $10,000,000 of which was outstanding at date of acquisition by the Commission. The powers granted to it were very broad and even included the right to build railways.

R.S.C. 50-51 Vic. Cap. 120

R.S.C. 62-63 Vic. Cap. 105.

On April 11th, 1900, the company entered into an agreement with the Queen Victoria Niagara Falls Park Commission, by which water might be conducted in an open channel from the Welland River to a power house in the Park. The agreement was approved by an Order-in-Council dated April 13th, 1900.

O.P.Co. Stat's. & Ag'ts p.47

O.P.Co. Stat's & Ag'ts p.60.

Subsequent agreements were entered into with

THE ATLANTIC CITY SHIPYARD OF VERNON VILLA

ELECTRICAL DESIGN.

The Dakotia Power Company of Niagara Falls was originally incorporated with an authorized capital of $280,000.00, by a special act of the Legislature of Lower Canada, dated June 22nd, 1897. It appears that the company was instituted under the name of the Canadian Power Company, by Sandler Ryan, who interested Silver Mills of Buffalo in it, and later John Jesse Alvright of Buffalo acquired control of the company. The change to the present name of the company was authorized by further act, dated July 10th, 1899, and by power conferred by the act of Incorporation the authorized capital stock was increased at different times to a total par value of $18,000,000, only $10,000,000 of which was outstanding at date of acquisition by the Dominion. The powers granted to it were very broad and even included the right to build railways.

On April 12th, 1900, the company entered into an agreement with the Niagara Finance Falls Power Dominion, by which water might be conducted in an open channel from the Dakotia River to a power house in the Park. The agreement was ratified by an Order-in-Council dated April 12th, 1900.

Subsequent agreements were entered into with

the Park Commission on August 15th, 1901, and June 28th, 1902, whereby the rights of development granted under the agreement of 1900 were surrendered, and instead provision was made to conduct water from the Welland and Niagara Rivers by means of pipe lines. The agreements were approved by Orders-in-Council dated April 23rd, 1902, and August 7th, 1902.

The amount of power which the company was permitted to generate is not specified in the agreement, but in the reports of the Park Commission the amount mentioned for the Niagara River intake is that required to generate 180,000 horsepower. W.P. of Canada p.75

The license granted by the Park Commission is for a term of fifty years, commencing April 1st, 1900, with the right to renew for three periods of twenty years each, bringing the total period under option to one hundred and ten years. W.P. of Canada p.76

The plant of the company was designed by Messrs. P.N. and L.N. Nunn and was put into service immediately after its completion in 1905. W.J.F. 419a p.1

The following power distributing companies in Canada were affiliated with the Ontario Power Company:

1. The Ontario Transmission Company, Limited
2. The Ontario Distributing Company
3. The Falls Power Company
4. The Niagara, Lockport & Ontario Power Company

W.P. of Canada p.77

The Jura Municipality on August 20th, 1921, one year and, 1923, namely the rights of hydroelectric energy the agreement of 1920 were summarized, and insured provision was made to exclude water from the valleys and flooded lands by means of dyke lines. The agreements were signed by Cabano-in-Council dated April 28th, 1922, and August 7th, 1923.

The record is there that the company was permitted to proceed in not complied in the agreement, but in the report of the Jura Municipality the amount mentioned for the Simon River Estate is just mentioned in greater 180,000 horsepower.

The license granted by the Jura Municipality is for a term of fifty years, commencing April 1st, 1920, with the right to renew for three periods of twenty years each, although the first period ends upon the two hundred and ten years.

The plans of the company was displayed by Messrs. J.A. and J.E. Dunn and was for late arrive immediately after its completion in 1923.

The Kitsilano Power distributing Company in Jura was affiliated with the Jasmin Power Company

1. The Jasmin Transmission Company, Limited
2. The Jasmin Distributing Company
3. The Kitsilano Power Company
4. The Kitsilano-Jasmin & Kitsilano Power Company

Subsequent to the passing of the Power Commission Act of 1906, the Hydro-Electric Power Commission of Ontario called for tenders for the supply of power. The Ontario Power Company of Niagara Falls submitted a tender which was eventually accepted by the Commission. Accordingly a contract dated March 19th, 1908, was entered into by which the Ontario Power Company agreed to deliver at Niagara Falls, Ontario, a maximum of 100,000 horsepower to be taken in certain blocks as required. This contract fixed the rate for power delivered at 12,000 volts at $9.40 per horsepower per annum up to 25,000 horsepower, and at $9.00 per horsepower per annum for all the power when the amount reserved and held ready for delivery upon the order of the Commission totalled 25,000 horsepower or more. An additional charge of $1.00 per horsepower for power delivered at 60,000 volts was agreed upon. The contract was approved by Order-in-Council under date of March 24th, 1908, and was to expire in 1950, corresponding with the term of the water lease of the company from the Park Commission. On March 25th, 1916, the amount of power ordered to be held in reserve for the Commission reached the total of 100,000 horsepower available under this contract.

HEPC. Minute Book No.2 p.54

W.J.F. p.6

W.J.F. p.7

The Commission proceeded to construct a transmission system, which came into operation August, 1910, to distribute the power purchased from the company.

Subsequent to the passing of the Power Commission Act of 1906, the Niagara-Electric Power Commission of Ontario called for tenders for the supply of power. The Toronto Power Company of Niagara Falls submitted a tender which was eventually accepted by the Commission. Essentially a contract dated March 1914, was entered into by which the Toronto Power Company agreed to deliver at Niagara Falls, Ontario, a maximum of 120,000 horsepower to be taken in certain stages as required. This contract fixed the rate for power delivered at 12,000 h.p. at $9.40 per horsepower per annum up to 22,000 horsepower, and at $9.00 per horsepower per annum for all the power when the annual returned was sufficiently for entirely upon the order of the Commission involving 22,000 horsepower or more. An additional charge of $0.50 per horsepower for power delivered at 22,000 volts was agreed upon. The contract was signed by Peter-in-Council under date of March 28th, 1914, and was in effect in 1920. Negotiations with the Town of the water issue of the company from the Town Commission. On March 28th, 1914, the amount of power updated is to hold in reserve for the Commission reserve the total of 120,000 horsepower available under this contract.

The Commission proceeded to construct a transmission system, which came into operation August, 1910, to distribute the power generated from the company.

and continued taking power from the company, under the above contract, until the acquisition of the company by the Commission on August 1st, 1917.

Prior to the purchase, except for a few small systems, the Commission had confined its activities in the main to the distribution of power rather than the generation.

The authority for the purchase was the enactment in 1917 of Clauses "g" and "h" of Section 8 of the Power Commission Act, and pursuant to the passing of these clauses, the Order-in-Council passed on May 26th, 1917. The agreement was ratified by the parties on August 1st, 1917, and was confirmed at the ensuing session of the Legislature. The agreement is set out in full commencing on page 152 of the Statutes of 1918. The agreement was dated April 12th, 1917, and the purchase was finally consummated as of August 1st, 1917

R.S.O. 7 Geo.V Cap.20 Sec.3

R.S.O. 8 Geo.V Cap.14 Sched. "U"

The Commission acquired from John Joseph Albright and his associates the shares of the Ontario Power Company of a par value of $10,000,000 for a consideration of $8,000,000, that is, at the rate of 80% of the par value of the capital stock, payable in 4% forty-year Gold Debentures of the Commission. The debentures are guaranteed by the Province of Ontario, pursuant to the provisions of Sections 14(c) and 14(d)

P.W. p.4

and entitled taking power from the company, under the terms contained, until the negotiations of the company by the Commission on August 1st, 1917.

Prior to the purchase, except for a few small systems, the Commission had overhead the negotiations in the main to the distribution of power rather than the generation.

The authority for the purchase was the resolves in 1917 of Chapter "g" and "ma" of Statutes 5 of the Power Commission Act, and pursuant to the passing of these chapters the Water-in-Council passed on May 16th, 1917. The agreement was ratified by the parties on August 1st, 1917, but was executed at the morning session of the Legislature. The agreement is set out in full commencing on page 182 of the Statutes of 1918. The agreement was dated April 1st, 1917, and the purchase was finally consummated on 1st August 1st, 1917.

S.C.G. 7 Geo.V Cap.25 Sec.5

S.C.G. 8 Geo.V Cap.16 Resol. "g"

The Commission assumed from the Ontario Hydro-Ele Power Commission the control of the Niagara Power Company at a par value of $19,699,000 for a consideration of $2,000,000, that is, at the rate of 10% of the par value of the capital stock; payable in 20 forty-year gold debentures of its Commission. The debentures are guaranteed by the Province of Ontario, pursuant to the provisions of Section 3(1) and 3(4)

S.C.G. 1.4

of the Power Commission Act.

The Commission is the owner of the shares of the Ontario Power Company, the directors and officers being:

Sir Adam Beck	President
Col. D. Carmichael	1st Vice-President
xF. R. Miller	2nd Vice-President
W. W. Pope	Director and Secretary
F. A. Gaby	Director and Chief Engineer
J. W. Gilmour	Director and Treasurer
W. J. Pierdon	Director

x now deceased.

Certain directors are receiving a salary from the Ontario Power Company as the paid officers of that company.

The properties of the company are situated, for the most part, at Niagara Falls, Ontario, and, at the date of purchase, consisted principally of a hydro-electric generating plant comprising a power house, two conduits or pipe lines, with the necessary headworks, and fourteen turbines and generating units and other equipment providing a capacity for generating approximately 160,000 horsepower. The company also owned real estate as well as the transformer station, transmission lines and distributing stations required for its uses. The transmission and distributing system was under the control of The Ontario Transmission Company, Limited, a subsidiary company of the Ontario Power Company. W.J.F. p.8.

In 1917 the Commission received, from the

of the Power Development act.

The Commission in the owner of the shares of the Ontario Power Company, the directors and officers being:

Sir Adam Beck	President
Col. J. Carolyn	1st Vice-President
W. E. Miller	2nd Vice-President
T. T. Pope	Director and Secretary
F. A. Gaby	Director and Chief Engineer
L. E. Gilmour	Director and Treasurer
V. A. Stevens	Director

I can assure.

Certain directors are receiving a salary from the Ontario Power Company as the paid officers of that company.

The properties of the company are situated, for the most part, at Niagara Falls, Ontario, and, at the date of purchase, consisted principally of a hydro-electric generating plant capacity a power house, two reservoirs or pipe lines, with the necessary buildings and feeders buildings and generating units and other equipment providing a capacity for generating approximately 143,000 horsepower. The company also owned real estate as well as the transformer stations, transmission lines and distributing stations required for its use. The transmission and distributing system was under the control of the Ontario Transmission Company, Limited, a subsidiary company of the Ontario Power Company.

V.T.T.
P.8.

In 1917 the Commission received, from the

Commissioners of the Queen Victoria Niagara Falls Park, permission to construct a third conduit, known as the "Third Pipe Line," and the construction of this conduit was completed in the spring of 1919. Two new generating units, Nos. 15 and 16, were added in a new extension of the power house and the capacity of the plant was increased to approximately 200,000 horse-power. At October 31st, 1921, the Commission had advanced $3,515,094.93 to the Ontario Power Company in connection with this construction.

W.J.F. p. 11 & 12.

On April 28th, 1922, an accident occurred which resulted in the destruction of units Nos. 15 and 16, and considerable damage by water to a number of other units causing a very large temporary reduction in the capacity of the plant. Generators Nos. 15 and 16 have not as yet been replaced and the present capacity of the plant is about 175,000 horsepower. Full details of the accident are given in a report to this Commission by Mr. Walter J. Francis, dated November 18th, 1922.

W.J.F. p.12

Commissioners of the Cross Vistavia Dispute (Alta Vista, permission to construct a tied canal, known as the "Tied Pipe Line," and the construction of this canal was completed in the spring of 1913. The new generating units, Nos. 12 and 13, were added in a new extension of the power house and the capacity of the plant was increased to approximately 200,000 horse-power. In October 1921, the Commission had expended $2,213,040.42 on the Cabrie Power Company in connection with this construction.

Cf. Lyne, op. cit. p. 11 & 12.

COPY

Cf. Lyne, op. cit., an earlier scheme which involved in the construction of units Nos. 10 and 12, and substantial change of water to a higher of other units meaning a very large temporary reduction in the capacity of the plant. Generators Nos. 12 and 13 have not as yet been replaced and the present capacity of the plant is about 120,000 horsepower. Full details of the contracts are given in a report in this connection by Mr. Walter L. Thomas, dated November 1921, 1922.

Cf. Lyne, op. cit. p.12

PHYSICAL

Location

The hydro-electric development of the Ontario Power Company is located on the Canadian side of the Niagara River in the immediate vicinity of the Horseshoe Falls, the headworks being about a mile above the Falls, and the power house in the gorge a short distance down-stream from the Falls. W.J.P. p.12

Headworks

The headworks, consisting of an intake, an outer forebay, a screen house, an inner forebay and a gate-house, are built of concrete and stonework and the principal buildings are monumental in design. W.J.P. p.12.

Conduits

Three underground conduits convey the water from the headworks to the penstocks leading to the turbines in the power house. The conduits are approximately 6,500 feet in length and have a total drop of 28 feet from the head-gates to the inlets of the penstocks.

The first conduit was made of steel plate and is designated No.1. It is of circular section with an internal diameter of 18 feet. A full description of this conduit in its present condition is given in a report to

P E T E R H E A D

Location

The hydro-electric development at the Peterhead Power Company is located on the Ouseburn side of the Elegra River in the immediate vicinity of the Shrewsbury Falls, the headworks being about a mile above the Falls, and the power house in the gorge a short distance downstream from the Falls.

Machinery

The headworks, consisting of an intake, an inlet trashrack, a screen house, an inlet trashrack and a grit-house, are built of concrete and masonry and the typical buildings are unusual in design.

Conduits

These underground conduits convey the water from the headworks to the penstock leading to the turbines in the power house. The conduits are approximately 4,400 feet in length and have a total drop of 22 feet from the headgates to the inlet of the penstock.

The first conduit was made of steel plate and is designated No.1. It is of circular section with an internal diameter of 12 feet. A full description of this conduit in its present condition is given in a report to

this Commission by Mr. Walter J. Francis, dated September 26th, 1922.

The second conduit, No.2, is constructed of reinforced concrete and is adjacent to No.1, and on the river side thereof. The section of No.2 is that known as a "hydrostatic chord" and has an area equivalent to that of a circle 13 feet in diameter. It was constructed in the years 1909 and 1910.

The third conduit, known as No. 3, is of wood-stave construction, of circular section with an internal diameter of 13.5 feet. It was constructed after the Ontario Power Company had been purchased by the Commission and was completed in 1919.

The water is admitted to the conduits by means of Stoney sluice head-gates, there being one head-gate for each conduit, all located in the gate-house. A surge tank is connected to each conduit. W.J.F. p.12 & 13

Penstocks

Sixteen steel penstocks embedded in concrete carry the water from the conduits to the main units in the power house, one penstock for each main unit. Nos. 1 to 12, inclusive, are 9 feet in diameter; Nos. 13 and 14 are 9.5 feet in diameter, and Nos. 15 and 16 are 10.5 feet in diameter. Johnson valves are installed in penstocks Nos. 12 to 16 and gate valves are connected to the others. W.J.F. p.13

this immediate by Mr. Walter C. Francis, dated September 26th, 1922.

The second conduit, No.2, is constructed of reinforced concrete and is adjacent to No.1, and to the river side thereof. The section of No.2 is then known as a "depressed ellipse" and has an area equivalent to that of a circle 12 feet in diameter, it was constructed in the years 1909 and 1910.

The third conduit, known as No. 3, is of wood-stave construction, it similar having also an internal diameter of 12.5 feet. It was constructed after the Niagara Power company had been purchased by the Ontario and was completed in 1914.

The water is delivered to the conduits by means of three sluice head-gates, there being one head-gate for each conduit, all located in the gate-house. A surge tank is connected to each conduit.

Turbines

Eleven vital penstocks embedded in concrete carry the water from the conduits to the main units in the power house, one penstock for each main unit. Nos. 1 to 10, inclusive, are 8 feet in diameter; No. 10 and 11 are 9.5 feet in diameter, and No. 12 and 13 are 12.5 feet in diameter. Johnson valves are installed in penstocks Nos. 11 to 13 and gate valves are connected to the others.

Power House

The power house is about 780 feet long and is located at the water's edge at the base of the cliff.

In the original plant there were fourteen main units in addition to the exciters. In 1919 main units Nos. 15 and 16 were added.

The turbine rating of main units Nos. 1 to 7 is 11,800 horsepower each; of Nos. 8 to 12 is 15,000 horsepower each; of Nos. 13 and 14 is 16,000 horsepower each, and of Nos. 15 and 16 is 18,000 horsepower each.

Units Nos. 1 to 6 are operated from conduit No. 1; unit No.7 is operated from conduit No.1 or No.2; units Nos. 8 to 12 are operated from conduit No.2; units 13 and 14 are operated from conduit No.2 or No.3, and units Nos. 15 and 16 were operated from conduit No.3.

All generating units are of horizontal shaft type and the net turbine head is estimated by the engineers of the Commission to be about 180 feet.

Generators Nos. 1 to 3 are 7,500 kilowatts each, generators Nos. 4 to 14 are 8,776 kilowatts each, and generators Nos. 15 and 16 were 12,000 kilowatts each. Unit No.15 commenced operation on June 3rd, 1919, and unit No.16 on August 12th, 1919. All these generators are three-phase, 25-cycles, 12,000-volts. The combined ordinary rating of the sixteen units is 143,000 kilowatts, or about 191,000 horsepower at 80 per cent. power factor.

Inner Dams.

The power house is about 720 feet long and is located at the water's edge at the base of the cliff.

In the original plant there were fourteen units in addition to the auxiliary. In 1912 units Nos. 18 and 16 were added.

The turbine rating of units Nos. 1 to 7 is 11,000 horsepower each; of Nos. 8 to 12 is 16,000 horsepower each; and of Nos. 13 and 14 is 13,000 horsepower each.

Units Nos. 1 to 4 are operated from switch No. 1; units Nos. 5 to 7 are operated from switch No.2; units Nos. 8 to 12 are operated from switch No.3; units 13 and 14 are operated from switch No.3 or No.4, and units Nos. 15 and 16 were operated from switch No.4.

All generating units are of Westinghouse type and the net turbine head is estimated by the engineers of the commission to be about 130 feet.

Generators Nos. 1 to 4 are 7,500 kilowatts each, generators Nos. 5 to 16 are 5,775 kilowatts each, and generators Nos. 17 and 18 were 12,500 kilowatts each. This No.18 commenced operation on June 6th, 1918, and unit No.16 on August 21st, 1919. All these generators are three-phase, 25-cycles, 13,800-volts. The combined rotating rating of the sixteen units is 122,507 kilowatts, or about 191,000 horsepower at 85 per cent. power factor.

The accident to the two 12,000 kilowatt generators on April 20th, 1922, reduced the nominal rated capacity of the plant by 24,000 kilowatts or 32,000 horsepower.

The maximum output obtained from the plant with three conduits and sixteen generators in service is stated to have been about 202,000 horsepower. The output with conduit No.1 alone is stated to be 59,000 horsepower. The surge tank installed with this conduit is said not to function adequately when operating alone.

The output of conduit No.1, with No.2 in service, is said to be about 66,000 horsepower. The output of conduit No.2, with No.1 in service, is said to be about 94,000 horsepower. The output of conduit No.3, with No.1 and No.2 in service, is said to be about 40,000 horsepower; and the total normal output with three conduits is about 200,000 horsepower. It will be noted that this output of 200,000 horsepower is 9,000 horsepower in excess of the combined ordinary horsepower rating of the sixteen generating units in the plant. This is due to the fact that the capacity of units Nos. 1 to 14 was increased by the increase in the water supply due to the installation of the third conduit.

When the accident occurred on April 20th, 1922, No.15 and No.16 generators were destroyed and their capacity was lost, but the water unused by them is now

The accident to one of 12,000 kilowatt generators on April 28th, 1923, reduced the combined power capacity of the plant by 24,000 kilowatts or 32,000 horsepower.

The smaller engine airplane from Kew-Cliff with three assembly and airframe generators to service is stated to have been about 200,000 horsepower. The value with complete Mk.I alone is stated to be 47,000 horsepower. The engine have installed with this assembly is said to therefore approximately more expensive since.

The engine at Rockcliff Mk.I, with Mk.2 in service, is said to be 28,000 horsepower. The engine at Rockcliff Mk.3, with Mk.1 in service, is said to be about 49,000 horsepower and the total assembly engine with three assembly is about 200,000 horsepower. It is said to appear that this engine at 200,000 horsepower is 3,000 horsepower in excess of the maximum ultimate horsepower rating of the airscrew propulsion unit in the plant. This is due to the fact that the capacity of units Mk. I is to be increased by the increase in dry weight weight due to the installation of the third condensing.

Then the accident occurred on April 28th, 1923, Mk.II and Mk.III generators were constructed and completely new units, but the units assembled by then it now

available for the other machines.

The peak capacity of the plant may therefore be considered as approximately 160,000 horsepower previous to the installation of the third conduit; 200,000 horsepower after the third conduit and generators No.15 and No.16 were installed and previous to the accident; and about 175,000 horsepower since the accident. The records show that an actual output of about 130,000 kilowatts, or 174,000 horsepower, has been obtained during recent months.

Under peak load conditions the power obtained from the water is stated to be approximately 15 horsepower per cubic foot per second, and on this assumption the maximum water used with sixteen machines would be $\frac{200,000}{15}$ =13,300 cubic feet per second; with No.1 and No.2 conduits and generators Nos. 1 to 14, the amount of water used would be $\frac{160,000}{15}$ = 10,700 cubic feet per second, and with three conduits and fourteen machines as at present the water used would be $\frac{175,000}{15}$ = 11,700 cubic feet per second.

The gross head of this development is about 215 feet, and accepting the value of 15 horsepower per cubic foot of water per second, the overall efficiency is about 61 per cent.

W.J.F. p.13, 14,15 & 16.

The Main Transformer and Distributing Station

The main transformer and distributing station is located on the top of the hill about 500 feet from the

available for the other machines.

The pump capacity of the plant may therefore be considered as approximately 140,000 horsepower greater in the immediate of the first machine (50,000 horsepower after the first machine and generators are in and 90,000 more immediate and greater in the machinery and about 120,000 horsepower alone the machine). The reserve thus that an actual margin of about 120,000 kilowatts, or 160,000 horsepower, has been obtained during tender trials.

Under each last a-building the power obtained from the motor is approximately 12 horsepower per cubic foot per second, and as this corresponds the maximum water head with cisterns machines would be $\frac{12 \times 550}{62.5} = 10.56$ cubic feet per second with 90-1 and that machine and correspondingly 6.1 to 14, the amount of water can vary in $\frac{140,000}{12} = 10,700$ cubic feet per second, and with three machine and turbines machines as it passes the water head would be $\frac{170,000}{12} = 11,700$ cubic feet per second.

The great head of this development is which 112 feet, was assigned the value of 12 horsepower per cubic foot of water per second, the overall efficiency is about 82 per cent.

The main transformer and distributing station

The main transformer and distributing station is located on the top of the hill about 300 feet from the

crest of the cliff at the rear of the power house and contains switching, operating and control apparatus, as well as the high voltage equipment. Communication is established between the power house and the transformer station by tunnels in which the 12,000-volt cables are carried, and by shafts in which elevators are installed.

Further details of the company's plant may be found in the reports of Mr. Walter J. Francis on the "Principal Characteristics of H. E. P. C. Plants," dated October 10th, 1922, and the "Description of the Plant of The Ontario Power Company of Niagara Falls", dated March 6th, 1923.

The plant and system of the Ontario Power Company is operated in parallel with the other generating stations at Niagara Falls, supplying power to private consumers, to the Commission and for export. The details of the combined operations of the various plants are discussed in a separate report on the Niagara System in which are also discussed the growth and other characteristics of the market, the data on population and so forth.

W.J.F. p.16

A map showing location of generating station, transformer stations and transmission lines forms the frontpiece of this report.

areas of the city as the year of the power house and control switching, operating and control apparatus, as well as the high voltage equipment. Coordination is established between the power house and the transformer station by tracing in which the 12,000-volt cables are buried, and by showing the which chambers are installed.

Further details of the equipment's size can be found in the report of Dr. Walter G. Chemnis on the "Electrical Characteristics of H. B. P. C. Plants." (Ref. October 1913, and the "Description of the Plant of the Ontario Power Company at Niagara Falls", dated March 6th, 1920.

The plant and system of the Ontario Power Company is expected to parallel with the other generating stations at Niagara Falls, supplying power to private consumers, to the Commission and for export. The details of the combined operations of the various plants are discussed in a separate report on the Niagara System in which are also discussed the growth and other characteristics of the market. The data on production and on rates,

A more showing location of generating stations, transformer stations and transmission lines from the Frontispiece of this report.

GENERAL ECONOMICS

The following review of the general economics of the company is based on information obtained from the reports submitted by Messrs. Price, Waterhouse & Company, Auditors, Messrs. Walter J. Francis & Company, Consulting Engineers, and Messrs. Clarkson, Gordon & Dilworth, Auditors, together with evidence given at the public hearing held in connection with the company.

Purchase Price

The Ontario Power Company of Niagara Falls and its subsidiary the Ontario Transmission Company, Limited, were acquired by the Commission under Agreement of April 12th, 1917, entered into with John Joseph Albright of Buffalo, acting as vendor of the shares of the purchased companies. The par value of the shares acquired was $10,000,000, which represents the total stock outstanding, and the consideration given for such shares was $8,000,000 payable by 4% forty-year Gold Debentures of the Hydro-Electric Power Commission of Ontario, guaranteed by the Province of Ontario. The assets of the companies at August 1st, 1917, amounted to $26,446,933.95 and the liabilities and reserves to $16,446,933.95. The liabilities included funded debt in the amount of $14,450,000, being outstanding mortgage bonds,

P.W. p.4

[illegible]

The following review of the general statutes of the company is based on information obtained from the reports issued by Messrs. Price, Waterhouse & Company, auditors, Messrs. Meier T. Francis & Company, Consulting Engineers, and Messrs. Clarkson, Gordon & Ellwood, Insurance Brokers, with private data of the Public Service Commission with the company.

Ontario Power

The Ontario Power Company of Niagara Falls and its subsidiary the Ontario Transmission Company, limited, were acquired by the Commission under Agreement of April 12th, 1917, entered into with John Joseph Kirkpatrick, acting as trustee of the shares of the predecessor companies. The par value of the shares acquired was $19,999,997, which represents the total issue outstanding, and the consideration given for such shares was $7,700,000 payable by 40 forty-year Gold Debentures of the Ontario-Quebec Power Commission of Ontario, guaranteed by the Province of Ontario. The assets of the companies at August 1st, 1917, amounted to $24,142,972.97 and the liabilities and reserves to $16,442,320.97. The liabilities including funded debt in the amount of $16,400,000, being water-making storage dams,

debentures, etc., the responsibility for which was assumed by the Commission.

Order-in-Council authorizing the purchase was approved by His Honour the Lieutenant-Governor on May 26th, 1917, and validated by the Legislature on March 26th, 1918.

At the close of each fiscal year the stock acquired and debentures issued therefor were as follows:

Period	Par Value of Stock	Debentures Issued Therefor
Year ending October 31,1917	$ 9,980,000.00	$7,984,000.00
Year ending October 31,1918	9,987,700.00	7,990,100.00
Year ending October 31,1919	9,993,700.00	7,994,900.00
Year ending October 31,1920	10,000,000.00	8,000,000.00
Year ending October 31,1921	10,000,000.00	8,000,000.00

P.W. p.4

At the time of acquisition of these properties, there was standing on the books of the Ontario Power Company an amount of $1,486,210.13 over the $10,000,000 stock shown above, representing a surplus built up prior to August 1st, 1917, the date the Commission assumed operation and control of the companies. P.W. p.5

This surplus item was closed out by the company as at August 1st, 1917, in the following manner: P.W. p.6

Amortization of Bond Discount, previously capitalized, representing the amount of discount applicable to the period prior to August 1st, 1917 -		
Power Company	$617,795.27	
Transmission Company	51,511.96	$669,307.23
Betterments to plant written off:		
Power Company	$ 72,436.51	
Transmission Company	7,310.28	79,746.79

debentures, etc., the responsibility for which was assumed by the Commission.

Over-in-Canada authorizing the purchase was approved by the Senate the Lieutenant-Governor on the 27th, 1917, and assented to by the Legislature on June 28th, 1918.

As the close of each fiscal year the stock acquired and debentures issued thereto were as follows:

Period	Par Value of Stock	Debentures Issued Thereto
Year ending October 31,1917	$ 4,880,000.00	$7,322,000.00
Year ending December 31,1918	5,227,700.00	7,193,100.00
Year ending December 31,1919	5,233,700.00	7,704,300.00
Year ending December 31,1920	10,000,000.00	8,000,000.00
Year ending December 31,1921	10,000,000.00	8,970,000.00

As the time of expiration of these properties, there was standing on the books of the Ontario Power Company an amount of $4,884,210.12 over the $10,000,000 stock above shown, representing a surplus paid up prior to August 1st, 1917, the date the Commission assumed ownership and control of the companies.

This surplus item was closed out by the company on August 1st, 1917, in the following manner:

Investments of said Company, previously capitalized, representing the amount of discount applicable to the period prior to August 1st, 1917 -

Power Company	$817,783.27
Transmission Company	32,373.85
	$850,157.12

Intercompany to plant written off:

Power Company	$ 73,436.22
Transmission Company	7,313.22
	78,749.44

Increase in Renewal and Depreciation Reserve Accounts:		
Power Company	$480,723.40	
Transmission Company . . .	256,432.71	$737,156.11
Total as above		$1,486,210.13

After closing out this surplus account, the net assets of the Ontario Power Company and the Ontario Transmission Company, Limited, amounted to $10,000,000 on August 1st, 1917, (as represented by the $10,000,000 stock acquired) as follows:

Total Plant, Real Estate & Goodwill .	$25,155,380.29	P.W. p.7
Less: Capital Stock of Ontario Transmission Company, Limited .	1,000,000.00	
	$24,155,380.29	
Current & Working Assets, deferred debits . .	2,291,553.66	
	$26,446,933.95	

LESS:

Funded Debt	$14,450,000.00	
Other Liabilities	1,116,100.60	
Reserve for Renewals	880,833.35	16,446,933.95
Excess of Assets over Liabilities . . .		$ 10,000,000.00

Represented by:-

Capital Stock of the Power Company outstanding in the hands of the Commission and of the public . . .	$ 10,000,000.00

As all the books of account were not handed over to the Commission at the time of acquisition of the companies, it is impossible to give details in support of the amount of plant of $25,155,380.29 shown above. P.W. p.5

Interest in Insured and Reputation:
Security Insurance:
Power Company . . . . . $[illegible]
Transmission Company . . . . [illegible]

Total as above . . . . . $3,[illegible]

After electing was this trying insurance, the net assets of the Ontario Power Company and the Ontario Transmission Company, Limited, amounted to $18,[illegible] on August 1st, 1927, (as represented by the $18,[illegible] stock exchange) as follows:

Total issue, that issue a quantity -	$[illegible]
Less: Original shares of Ontario Transmission Company, Limited .	[illegible]
	$[illegible]
Interest a [illegible] accounts	
assets . . .	[illegible]
	$[illegible]

Less:

Funded Debt	$[illegible]
Other liabilities	[illegible]
Assets for Insurance	[illegible]

Assets at issue area
Liquidation . . . $ 10,000,000.00

Deferred Sy:-
Capital Debt of the Power Company
outstanding in the hands of the
Municipal and of the Public . . . $ 18,[illegible]

In all the notes of assets was not issued over
to the Municipal at the time of acquisition of the companies.
It is impossible to give details in support of the amount
of plant at $[illegible] shown above.

Investment by the Commission

As at October 31st, 1922, the Commission had advanced funds to, or issued bonds for the purposes of the company in the following amounts:

For the Third Pipe Line	$3,514,676.62		
For retiring bonds due 1921 . . .	3,200,000.00	$6,714,676.62	
4% forty-year bonds, issued in payment of the purchase price of the capital stock of the company . .		$8,000,000.00	CG&D BS. 10/31/22
Accrued interest owing to the Commission at October 31st, 1922		147,856.16	
Amounts owing on the current account		328,508.05	
Total		$15,191,040.83	

It is to be noted that the $3,200,000.00 advanced by the Commission for retiring bonds due in 1921 was obtained by the sale of the Commission's debentures guaranteed by the Province.

The $3,514,676.62 was advanced to the company by the Commission out of funds appropriated by the Government for other purposes and funds obtained from the Bank of Montreal on a loan in the amount of $1,250,000. When this loan was made, it was understood that it was to be paid off out of revenue of the Company, in monthly instalments of $50,000.00 each. Only one payment has been made up to the present time, and the balance of $1,200,000 remains owing to the bank at October 31st, 1922. It would appear that

Advanced by the Municipality

As at October 31st, 1930, the Municipality had advanced funds to, or issued bonds for the purposes of the company in the following amounts:

For the Third Pipe Line	$2,014,576.62
For erecting boats due 1923 . . .	3,000,000.00
	$5,014,576.62
40 forty-year bonds, issued in payment of the purchase price of the capital stock of the company . .	14,345,000.00
Interest owing to the Municipality at October 31st, 1922	347,000.16
Amount owing on the current account	609,609.09
. . . . .	$19,191,000.63

It is to be noted that $2,320,000.00 advanced by the Municipality for pumping boats due in 1921 was entirely by the side of the Municipality's debentures guaranteed by the province.

The $5,014,576.62 was advanced to the company by the Municipality out of funds appropriated by the Government for other purposes, and funds obtained from the Bank of Montreal by a loan to the amount of $1,800,000. Such this loan was made, it was understood that it was to be paid off out of revenue of the company, it monthly increments of $20,000.00 each. Only one instalment has been made up to the present time, and the balance of $1,780,000 remains owing in the Bank of Montreal, 1922. It bears interest

COPY

some arrangement must be made to place this loan in the form of long term indebtedness, as under the present plan it is being repaid on a sinking fund basis over a period of thirty years.

Investment in Capital Assets

In his initial report on the accounts of the company at October 31st, 1918, Mr. Clarkson states in respect of plant and equipment accounts at that date, and in connection with the absence of the original books of entry that, "From such information as is available, however, they would appear to consist approximately as follows:

P.W. p. 849

(a) Investment in plant, real estate transmission lines, distributing stations	$14,747,599.49
(b) Discount on bonds capitalized, less amounts written off	971,284.55
(c) Attributed to value of rights, franchises, goodwill, etc . . .	10,304,113.07
(d) Expended upon construction of Third Pipe Line to works of Company (in progress)	1,349,170.63
	$27,372,167.74

From the above, it will be noted that the intangibles at October 31st, 1918, amounted to approximately $10,300,000.

The total investment in capital assets at October 31st, 1922, was $27,639,622.88, made up as follows:

Even approximate must be made to place this item in view of long term indebtedness, we under the present plan it is being repaid on a sinking fund basis over a period of thirty years.

Interest in Twelve Years

In his initial report on the economic of the country as regards Rhodesia, Mr. Thompson states in regard to plant and equipment necessary at that date, and in accordance with the answers of the original boards of every kind. "Free rail transportation is available." However, they would appear to totally underestimate as follows:

(a) Investment in plant, rail engine transmission lines, distributing stations	£38,747,874.4d
(b) Discount on bonds unexpired. Less amounts written off . . .	£73,444.4d
(c) Attributed to value of rights, franchises, goodwill, etc . . .	£2,324,333.2d
(d) Expended upon overgrowths of Vicad Pipe line to works of Sanyati (in progress) . . .	£1,949,378.4d
	£47,074,127.7d

From the above, it will be noted that the investment at October-Nov. 1930, amounted to approximately £10,300,000.

The total investment in capital assets at Pretoria Nov. 1924, was £27,217,633.2d. made up of 2d items.

Plant, Real Estate, Transmission Lines, Distributing Stations and Rights	$25,132,427.40	
Expenditures on construction of Third Pipe Line (completed) . .	3,514,676.62	CG&D BS. 10/31/22
Tools and Construction Equipment	32,334.17	
Furniture and Fixtures	8,533.19	
Instruments	452.96	
Automobiles and Vehicles . . .	1,193.54	
	$28,689,622.88	
LESS:		
Capital Stock of Ontario Transmission Company, Limited . .	1,000,000.00	
	$27,689,622.88	

Third Pipe Line

On account of the shortage of power in the Province of Ontario, the Commission undertook the construction of a Third Pipe Line, which was discussed in a directors' meeting of the Company on December 20th, 1917, as follows:

> "The Chief Engineer submitted a further report with respect to the construction of wood stave pipe line at Niagara, outlining an estimated expenditure of $1,806,000 covering the supplying of an additional 50,000 h.p. The matter was carefully considered and it was decided that the scheme in its entirety was necessary and feasible, providing the financial arrangements could be carried out and the matter was left in thehands of the President to submit a complete statement of the present and proposed earnings of the Company to the Bank of Montreal with a view of obtaining the necessary money to cover the work." H/B p.50

Under authority of an Order-in-Council dated February 6th, 1918, the Commission obtained a loan of $1,250,000 from the Bank of Montreal, which was guaranteed

Plant, land rights, Transmission Lines, Distributing Systems and Plants	$22,122,027.40
Expenditures on construction of Table Pit Dike (suspended) . .	4,121,274.22
Poles and Transmission Equipment	22,191.12
Furniture and Fixtures	8,232.10
Instruments	484.41
Automobile and Vehicles . . .	1,172.24
	$28,699,022.50

Less:

Capital Stock of Catarqui Transmission Company, Limited . .	1,000,000.00
	$27,699,022.50

Table Pit Dike

On account of the shortage of power in the Province of Ontario, the commission undertook the construction of a Table Pit Dike, which was discussed in a directors' meeting of the Company on January 20th, 1917, as follows:

"The Chief Engineer submitted a further report with respect to the construction of that dike Pipe line at Tiverton, outlining an estimated expenditure of $1,200,000 covering the supplying of an additional 20,000 h.p. The owners are certainly concerned and it was decided that the cause in the shortage was unusually and reasonably, providing the financial arrangements would be carried out and the matter was left in readiness of the President to submit a complete statement of the project and proposed arrangements of the Company to the Chief of Ontario with a view of obtaining the necessary money to cover the work."

Under authority of an Order-in-Council issued February 6th, 1917, the Commission obtained a loan of $1,100,000 from the Bank of Montreal, which was guaranteed

by the Province. First Mortgage Bonds of the Company of $1,400,000 were pledged to the Bank as collateral security for the loan.

The total advances by the Commission as at October 31st, 1922, for purposes of the Third Pipe Line amounted to $3,514,676.62, all of which had been expended in construction at that date, as follows:

General and Head Office	$ 286,499.15	
Engineering	108,971.60	
Generating Stations	716,790.16	
Construction Plant and Machinery	87,913.13	P.W.
Construction	2,309,566.17	p.10
Rehabilitating track from "Maid of the Mist" landing to the Ontario Power Company power house	5,354.72	Ex.III
	$3,515,094.93	
Less adjustments during 1922 . .	418.31	
Total October 31, 1922 . .	$3,514,676.62	

Accounts Receivable

The balance of $533,110.42 of accounts receivable at October 31, 1922, is considered collectible by the Commission, subject to the following comments.

Included in the above amount is an overdue account outstanding against the Department of Railways and Canals in the amount of $56,484.55 in ~~respect of~~ dispute as to the rates charged for power during the period from August, 1919, to October 31st, 1922, which were not governed by written agreement. There is also an amount of $151,638.94 against the Niagara, Lockport & Ontario Power Company, representing the

to the Territories. First Instalment based on of the Borrowing of $1,000,000 were pledged to the Land as collateral security for the loans.

The total advances by the Dominion at Saturday, March, for Saskatchewan if the Crop Lien Act amounted to $4,414,272.42, all of which had been expended in construction as that date, as follows:

Seeds and Food Ration	$ 300,000.00
Engineering	300,271.42
Operating Stations	718,179.18
Construction Plant and Machinery	87,313.13
Buildings	2,958,508.17
Rehabilitating trees from "Wind" at the "Lake" Station in the Interests of the Forestry Service Bureau	3,110.12
	$4,417,172.42
Less Adjustments during 1922 . . .	2,900.00
Total October 31, 1922 . . .	$4,414,272.42

Economic Possibility

The balance of $2,000,114.42 of available possibility as October 31, 1922, is considered sufficient by the Commission, subject to the following economies.

Included in the first mentioned is an average annual outstanding against the Department of Railways and Canals in the amount of $12,400.00 in connection with the rates charged for power during the period from August, 1917, to October 31st, 1922, which were not provided by Parliamentary authority. There is also an amount of $12,000.00 against the Ministry, Energy & Natural Power Commission, representing the

balance of certain bills standing in arrears, balances of certain other bills and unpaid American exchange charges which are in dispute.

Claims against J. J. Albright

The Company has a claim against Mr. J. J. Albright of Buffalo, in the amount of $295,633.20, which represents a minimum amount that the Company contends should be deposited by Mr. Albright under the terms of the purchase agreement dated April 12, 1917. This claim arose out of the sale of the Company to the Commission and represents charges for interest, expenses, taxes and water rentals to August 1, 1917, when the Commission took over control of the Company and which were not included in the liabilities at that date. Of the amount of the claim, approximately $111,000 was awarded to the Commission by a judgment of the Supreme Court of Ontario; the balance is still under negotiation.

Deposit with Supreme Court of Ontario

This item in the amount of $169,425.24 represents cash deposited with the Supreme Court of Ontario in connection with litigation arising out of a claim by the Toronto Power Company. Under part of the agreements by which the Commission assumed control of the Toronto Power Company, it was stipulated that all existing litigation be wiped out, so this deposit of $169,425.24 was released to the Commission and has been returned to them since the close of the last fiscal year.

CG&D
Opr. Ac.
Oct/22

Balance of certain items relating to arrears, balances of certain other items and unpaid Interest coupons amounts which are in dispute.

Claim against A. J. Aitchison

The Company has a claim against Mr. A. J. Aitchison of Halifax, in the amount of $158,491.83, which represents a minimum amount that the Company contends should be expended by Mr. Aitchison under the terms of the purchase agreement dated April 15, 1917. This claim arose out of the sale of the Company to the Dominion and representations concerning the income, expenses, profits and other matters in August 1, 1917, when the Commission found that assets of the Company and which were not included in the liabilities at that date. If the amount of the claim, approximately $127,000 was awarded to the Commission by a judgment of the Supreme Court of Ontario; the balance is still under negotiation.

Deposit with Supreme Court of Canada

This item in the amount of $127,828.04 represents such deposited with the Supreme Court of Canada in connection with litigation arising out of a claim by the Toronto Power Company. Under part of the agreements by which the Commission assumed control of the Toronto Power Company, it was stipulated that all outstanding litigation be wiped out, so this deposit of $127,828.04 was released to the Commission and has been returned to them since the close of the last fiscal year.

Discount on Bonds

The balance in this account at October 31st, 1922, amounted to $933,695.96. Prior to the date the Company was taken over by the Commission, discount on bonds in the sum of $1,702,525.91 was included in the accounts as part of the cost of the properties. In distributing the credit balance in Surplus Account at August 1st, 1917, this amount was reduced to $1,033,218.68. The changes in the account from August 1st, 1917, to October 31st, 1922, are as follows: P.W. p.17, 18

August, 1917 - Balance	$1,033,218.68	
Less - Amount charged to Profit & Loss from August 1st, 1917, to Oct. 31, 1922	245,413.53	$ 787,805.15
ADD:		
Amount of discount on debentures issued by the Commission, for purpose of retiring debentures of Power Company due July 1st, 1921	$ 156,480.00	
LESS:		
Written off to Profit and Loss	10,589.19	145,890.81
Balance at October 31st, 1922		$933,695.96

The sum of $933,695.96 will be charged against future operations during life of the bonds and debentures.

American Exchange on Remittances to retire Bonds due 1921 - $353,920.77

The American exchange paid in connection with the retirement of $2,753,000.00 of Ontario Power Company 6% Second Mortgage Debentures, which fell due on July 1st, 1921, and were payable in American funds, amounted to $359,157.70. Of

Discount on Bonds

The balance in this account at October 31st, 1922, amounted to $[illegible]. Prior to the date the Company was taken over by the Dominion, discount on bonds in the sum of $[illegible] was included in the accounts as part of the assets of the properties. In distributing the yearly balance in Sinking Account as August 1st, 1917, this amount was written up to $[illegible]. The changes in the account from August 1st, 1917, to October 31st, 1922, are as follows:

August, 1917 - Balance	$[illegible]
Less - Amount charged to Profit & Loss Account July 1st, 1917, to [illegible]	[illegible]
	$ [illegible]
Add: Amount of discount on debentures issued by the Dominion, for purpose of retiring debentures at Quebec Company due July 1st, 1921	[illegible]
Less: Written off to Profit and Loss	[illegible]
Balance at October 31st, 1922 . . .	$[illegible]

The sum of $[illegible] will be charged against Income Account during July of the years and thereafter.

American Exchange on Securities
In Sinking Fund [illegible] - [illegible]

The American exchange gain in connection with the retirement of $[illegible] of bonds under Company's 5% Sterling debentures, which fell due on July 1st, 1921, was paid to in American funds, amounted to $[illegible]. Of

this amount $24,236.93 was charged against operations in the period from June 24th, 1921, to October 31st, 1922, leaving a balance at October 31st, 1922, of $335,920.77. It is the intention to write off this exchange over a period of twenty years.

Mortgages, Bonds, Debentures, etc.

The total outstanding mortgages, bonds, debentures, etc., against the properties of the Companies at October 31st, 1922, amounted to $10,691,000, as follows:

P.W. p.19-22

Ontario Power Company	
1st Mortgage 5% Bonds due 1943, (authorized $12,000,000) - outstanding	$9,092,000
Ontario Transmission Company	
1st Mortgage 5% Bonds due 1945, (authorized $2,000,000) - outstanding	1,599,000
	$10,691,000

A full description of these outstanding obligations will be found on pages 19, 20, 21 and 22 of Price, Waterhouse & Co.'s report.

It should be noted that these bonds are being purchased out of sinking fund payments to the trustees, and during the fiscal year ending October 31, 1922, the following amounts were retired:

Ontario Power Company	
1st Mortgage 5% Bonds, 1943	$126,000.00
Ontario Transmission Company	
1st Mortgage 5% Bonds, 1945	31,000.00
Total	$157,000.00

C&AD

This amount $15,344.32 was charged against operations in the period ended June 30th, 1921, by transfer from Inventory of Balance at January 31st, 1921, of $1,000,000.37. It is the intention to write off this amount over a period of twenty years.

Buildings, Plant, Machinery, etc.

The total valuation of buildings, plant, machinery, etc., against the properties of the Company as December 31st, 1919, amounted to $10,283,190, as follows:

Private Power Company

Per Balance Sheet of 31st Dec. 1919	
Less Depreciation $1,000,000 - written off	$9,283,190

Private Transmission Company

Per Balance Sheet of 31st Dec. 1919	
Less Depreciation $20,000,000 - written off	1,000,000
	$10,283,190

A full description of these valuations appraisals will be found on pages 12, 13, 21 and 22 of Price, Waterhouse & Co.'s report.

It should be noted that these bonds are being redeemed out of sinking fund payments in the treasury, and during the fiscal year ending October 31, 1922, the following amounts were retired:

Private Power Company

Per Balance Sheet, 1920	$130,000.00

Private Transmission Company

Per Balance Sheet, 1920	87,000.00
	$217,000.00

Reserve for Renewals

The balance in the reserve for renewals account in respect of the combined properties of the Ontario Power Company and the Ontario Transmission Company, Limited, at October 31st, 1922, was $1,767,026.04 comprising the following: P.W. p.23

			C&D 1922 Accts.
Balance August 1st, 1917			$ 880,833.35
Reserves:			
Year ending October 31, 1920	$385,499.44		
Year ending October 31, 1921	385,814.69		
Year ending October 31, 1922	335,777.71		1,107,090.84
			$1,987,924.19
LESS:			
Charges -			
Year ending October 31, 1920	$ 35,230.66		
Year ending October 31, 1921	118,308.46		
Year ending October 31, 1922	67,359.03		220,898.15
			$1,767,026.04

No provision was made for renewals for the years ending October 31st, 1918, and October 31st, 1919.

It might be well to point out that interest has not been added to the balance at the credit of this fund as is the practice of the Commission in the case of other power undertakings. In the above statement it will be noted that there was a credit balance of $880,833.35 in the account for renewals of plant and so forth as at August 1st, 1917. When the properties were acquired by the Commission this credit was made up largely of a transfer from the surplus account at that date. There is no information available as to what actually constituted the credit amount in this reserve at that date. W.J.P. 39-44

Liability for Insurance

The balance in the reserve for Tuscowia account in respect of the assigned properties of the Lakeside Steel Company and the Ontario Transportation Company, Ashtown, as at October 31st, 1922, was $2,767,022.94 comprising the following:

Balance forward Oct. 1, 1917	$ 889,223.20
Insurance:	
Year ending October 31, 1918	1,100,444.44
Year ending October 31, 1921	288,414.67
Year ending October 31, 1922	488,777.11
	2,767,022.94

Less:
Charges -

Year ending October 31, 1920	$ 24,223.22
Year ending October 31, 1921	316,898.42
Year ending October 31, 1922	47,327.03
	388,470.16
	$2,367,022.04

In preparing the claim for recovery for the years ending October 31st, 1919, and October 31st, 1920.

It might be well to point out that interest has not been added to the balance as the credit of this fund as in the preparing of the statements in the case of other years underwriting. In the above statement it will be noted that there was a credit balance of $388,470.16 in the account for recovery of plant and so truth as at August 1st, 1917. Some the properties were acquired by the Consolidation this credit was made up largely of a transfer from the surplus account at that date. There is no determinate evidence as to what actually constituted the credit amount in this reserve at that date.

as the original books of account are not available.

It has been stated that no appraisal of the properties has been made since the companies were acquired, but in order to determine rates to be used in the computation of the annual renewal provisions, the Engineering Department of the Commission made a re-classification of all the properties, exclusive of the extension known as the Third Pipe Line, as shown on the books at July 1st, 1919. In the case of the Third Pipe Line extension, the analysis of the Engineering Department is stated to be based on book figures as of October 31st, 1919.

W.J.F.
39-44

The rates established by this re-classification and which were applied on a straight line basis are as follows:

(1) 1.85% per annum on the properties, including lands, of the Ontario Power Company of Niagara Falls.

(2) 2.85% per annum on the third pipe line exclusive of hydraulic and other equipment used in connection therewith.

(3) 3% per annum on the properties including right-of-way of the Ontario Transmission Company, Limited.

These rates we understand have been applied on the approximate balance of the property account at the close of each year respectively, less certain deductions for intangible values.

It is understood that it is the practice of the Commission to spend sufficient money on maintenance account

in the actual books of account are not available.

It has been stated that as against of the properties has been made since the companies were acquired, but in order to ascertain what is to be used in the computation of the annual renewal provision, the Engineering Department of the Commission made a re-classification of all the properties, comparing of the schedule known as the Trial Balance, as shown on the books at July 1st, 1929. In the case of the Trial Plus Line companies, the analysis of the Engineering Department is stated to be based on such figures as at October 31st, 1929.

The rates established by this re-classification and which were applied on a straight line basis are as follows:

(1) 1.95% per annum on the properties, including land, of the Ontario Power Company of Niagara Falls.

(2) 2.25% per annum on the Trial plus line equipment of hydraulic and steam equipment used in generation thereunder.

(3) 3% per annum on the properties including rights-of-way of the Ontario Transmission Company, Limited.

These rates on warehouses have been applied on the distributors balance of the property account in the above as were per respectively, line certain modifications for individual values.

It is understood that it is the practice of the Commission to apply sufficient money on maintenance revenue

each year to keep each and every portion of the system in a condition to operate in accordance with the requirements of economical production, which, it is stated, is considered to be about 75 per cent. as good as its original new condition. On this basis, our Consulting Engineer has expressed the following opinion as to the adequacy of the renewal reserve at October 31st, 1922:

> "The balance sheet of the combined properties at October 31st, 1922, shows assets of approximately $31,000,000 which includes about nine or ten millions of dollars of intangibles. It is a question whether these intangible values should be considered as depreciating and subject to renewal account, and if so to what extent. Considering all factors the amount of depreciable capital to be covered by a renewal account is probably of the order of six million or seven million dollars after making allowance for the portion provided for by maintenance account as above mentioned. As the plant has been in operation for nearly twenty years, it would appear that the total amount in the reserve account, which now stands at approximately one and three-quarters millions of dollars on the books, is smaller than it should be. Further, it should be borne in mind that no information is available regarding the composition of the initial provision for the fund and that the book value of the whole renewals account apparently does not represent actual funds available for renewals or extensions," as the moneys that have been set aside for renewals have "been called upon for the retirement of bonds to the extent of over $700,000."

WJF. 39-44

Should a substantial amount be required for renewals it will be necessary to provide such funds by issuing new bonds, or by some other means.

WJF. p.40 -44

each year to meet cost and every period of the year is a condition to operate in accordance with the requirements of economical production, which, it is stated, is considered to be about 75 per cent. As you are by original new conditions, on this basis, our domestic Engineer has expressed the following opinion as to the adequacy of the reserve at October 31st, 1952:

"The balance sheet of the qualified properties at October 31st, 1952, more nearly is approximately $31,000,000 which includes about nine or ten million of dollars of inventories. It is a question whether these inventories should be considered as depreciating and subject to recent amounts, and to to what extent. Individual allowances the owner of depreciable assets to be treated by a reviewed account in probably of the order of six million or seven million dollars after making allowance for the parties provided for by maintenance expense as above mentioned. As the plant has been in operation for nearly twenty years, it would appear that the total amount in the reserve account, which now stands at approximately six and three-quarters million or fifteen on the books, is smaller than it should be. Further, it should be borne in mind that no information is available regarding the assumption of the initial provision for the fund and that the best value of the whole reserve account apparently does not represent actual funds available for renewals or extensions," as the monies that have been set aside for renewals have "been called upon for the replacement of bonds to the extent of over $500,000."

Should a substantial amount be required for renewals it will be necessary to provide such funds by issuing new bonds, or by some other means.

Since the close of the fiscal year ending October 31st, 1922, the Commission has made a revision in the renewal rates, as follows:

(1) The 1.85% per annum formerly used on the properties, including lands of the Ontario Power Company of Niagara Falls, has been reduced to 0.75% with interest at 4% per annum, to be effective from August 1st, 1917. H.E.P.C. & CG&D

(2) The 2.85% per annum formerly used as applying to the Third Pipe Line has been discontinued with the view that this property is to be maintained out of current maintenance charges.

(3) The 3% per annum formerly used on the properties including right-of-way of the Ontario Transmission Company, Limited, has been reduced to 1.25% with interest at the rate of 4% per annum, to be effective from August 1st, 1917.

On this basis, the balance in the Renewals Account at October 31st, 1922, amounted to $1,387,736.85, or $379,289.19 less than the balance of $1,767,026.04 before the revision was given effect to. The reduction was applied as follows:

Particulars		
Applied to credit of Sinking Fund Reserve - Third Pipe Line	$112,481.98	
Applied as a reduction of 1922 power costs	188,622.04	CG&D W.H.B.
Applied to credit of contingencies reserve	72,935.96	
Balance credited to surplus	5,249.21	
Total Reduction	$379,289.19	

The balance of the Reserve at October 31st, 1922, after giving effect to the above revision comprises the following:

Since the close of the fiscal year ending October 31st, 1927, the Treasuries has made a revaluation in the reserve ratios, as follows:

[1] The 1.25% per annum formerly used in the gold-purchase, including funds of the Treasury Department of Finance Paris, has been reduced to 0.75% with interest at 4% per annum; to be effective from January 1st, 1927.

[2] The 2.25% per annum formerly used as applying to the Sinking Type Sinks has been eliminated with the view that this property is to be maintained via at current equivalent (Sterling).

[3] The 5% per annum formerly used on the principle including rights-of-way of the Public Treasuries Department, Italian, has been reduced to 3.50% with interest at the rate of 4% per annum, to be effective from January 1st, 1927.

On this basis, the balance in the Treasuries Reserve as October 31st, 1926, amounts to $1,277,728.49, or $279,224.19 less than the balance of $1,721,466.61 before the revision was put into effect 4%. The computation was applied as follows:

Description	
Applied to assets of Sinking Fund Reserve - Sinks Type Sinks	$112,441.00
Applied as a reduction of 1926 Power Debts	139,111.49
Applied to credit of Quintupleville Reserve	27,672.70
Balance credited to surplus	2,197.71
Total Reduction	$279,224.19

The balance of the Reserve at October 31st, 1926, after giving effect to the above revision computes the relative

Balance transferred from surplus August 1st, 1917			$880,833.35
ADD: Amount provided out of revenue to October 31st, 1922, on basis outlined above -			
	Ontario Power Company	Ontario Transmission Co.	
1917	$22,300.68	$ 6,463.25	
1918	89,927.84	25,766.66	
1919	89,979.41	26,451.67	
1920	90,074.89	26,265.55	
1921	90,252.41	26,238.52	
1922	90,245.08	26,246.88	
	$472,780.31	$137,432.53	610,212.84
ADD: Interest at 4%	42,301.92	12,272.65	54,574.57
Total	$515,082.23	$149,705.18	$1,545,620.76
LESS: Charges against the reserve exclusive of those in connection with the Third Pipe Line			157,883.91
Balance, October 31, 1922 . .			$1,387,736.85

CG&D W.H.B.

Our Consulting Engineer expressed the following opinion concerning the reduction of the renewal reserve:

> "It is difficult to understand what advantage is to be expected from a further reduction in an already inadequate reserve for renewals."

and in respect of the use of renewal funds for the retirement of bonds, he states as follows:

W.J.F. p.44

> "It might be argued that the use of reserve for renewals to provide a fund for the retirement of outstanding bonds could be justified if it is the intention to scrap the plant of the Ontario Power Company, but in that case it would seem reasonable that provision should be made to set aside a fund from revenues sufficient to pay all obligations before the plant will have lost its earning power."

Balance transferred from surplus
August 1st, 1917 $[illegible]

Add:
Amount provided out of revenue to
October 31st, 1922, as herein explained
above -

	Thorold Power Company, Limited	Welland Power Company, Limited	Total
1917	$[illegible]	$[illegible]	
1918	[illegible]	[illegible]	
1919	[illegible]	[illegible]	
1920	[illegible]	[illegible]	
1921	[illegible]	[illegible]	
1922	[illegible]	[illegible]	
	($[illegible]	[illegible])	$[illegible]

Add:
Interest
at 4% [illegible] [illegible] [illegible]

Total $[illegible] $[illegible] $[illegible]

Deduct:
Charge against the reserve
equivalent of loss in exchange with
the Third Time Zone . . . . . [illegible]

Balance, October 31, 1922 . . . $[illegible]

The Commission Engineer expressed the following
opinion concerning the reduction of the renewal reserve:

"It is difficult to understand what advantage
is to be expected from a further reduction in
an already inadequate reserve for renewals."

and in respect of the use of renewal funds for the relief-
ment of bonds, he states as follows:

"It might be argued that the use of revenue
for renewals is virtually a fund for the retire-
ment of maintaining bonds could be justified
if it is the intention to scrap the plant of
the Ontario Power Company, but in that case it
would seem reasonable that provision should
be made to set aside a fund from revenue
sufficient to pay all obligations before the
plant will have lost its earning power."

Sinking Fund Reserve

Up to October 31st, 1922, the company provided out of revenue and paid over to the Commission the following amounts for sinking funds, which includes $112,481.62 transferred from the reserve for renewals to apply as sinking fund on the third pipe line, from the date that it went into operation:

In respect of -		
$8,000,000 4%, 40-year debentures of the Commission (Provision for 1921 and 1922)	$200,000.00	
Cash Advances for the construction of the third pipe line (Provision from date of first operation)	228,964.86	CHAD WRB.
$3,200,000 debenture issue of the Commission to retire the bonds of the company due July 1, 1921 (Provision from July 1, 1921)	32,000.00	
	$460,964.86	
ADD Interest at 4% per annum	16,584.06	
Total	$477,548.92	

And in addition have provided out of revenue sinking funds in the amount of $11,309.95, not yet payable.

The following is a statement of the bases of sinking fund provisions:

Starting Fund Balance

On 24 October 1976, 1980, the company received the of payment and yield over on the debentures the following amounts for existing funds, which included $112,041,00 transferred from the reserve for rounding to apply to starting fund as the third year line, from the date about it must have operations:

In respect of -

19,000,000 ed. 8%-year debentures of the Dominion (operations from 1981 and 1980)	$500,000.00
Cash reserve for the depreciation of the third pipe-line (previously from date of first operation)	320,464.41
19,320,000 debentures issue of the Dominion to retire the bonds of the company due July 1, 1981 (operations from July 1, 1981)	24,000.00
The interest at 4% per annum	24,000.00
T o t a l	$844,520.41

and in addition the previous six months

starting fund in the amount of $12,409.30, for the period.

The difference is a shortfall of the funds at

starting fund provisions

Particulars	Principal Outstanding Oct.31,1922	
In respect of the companies' obligations:		
First Mortgage 5% Sinking Fund Bonds 1943 - Annual payment of $1.00 for each electrical horse-power sold and paid for in the previous calendar year	$9,092,000.00	
First Mortgage 5% Bonds 1945 - Annual payment of $30,000	1,599,000.00	PW p.26 -27.
Cash advances re Third Pipe Line - An annual payment sufficient at 4% interest to retire the obligation in thirty years	3,514,676.62	
In respect of obligations of the Commission:		GG&D 1922 Acts
Forty Year 4% Debentures 1957 - An annual payment sufficient with interest at 4% per annum to retire the bonds at maturity, the period covering thirty-seven years	8,000,000.00	
Twenty year 6% Bonds 1941 - A payment of 1% of the principal per annum - equivalent to approximately a forty-one year basis ..	3,200,000.00	
T o t a l	$25,405,676.62	

A study of the operating account fails to show any direct provision from revenues for sinking fund to be used to retire bonds of the Ontario Power Company and the Ontario Transmission Company, and it would appear upon analysis that the funds used in retiring the bonds have, to a large extent . WJP p.48

been appropriated out of the reserve for renewals and that this reserve fund has in reality been depleted to the extent of about $600,000.00 to the end of 1921, and about $725,000.00 to the end of 1922.

It would seem to be preferable to show the requirements for the retirement of the bonds of the Ontario Power Company and of the Ontario Transmission Company as a direct operating charge, as is done in the case of the sinking fund provisions to retire the bonds of the Hydro-Electric Power Commission and to pay the cash advances for the construction of the third pipe line extension. WJP. p.48.

Deposits for sinking fund purposes have been made with the Trustees of the first mortgage bond issues, since the date the companies were acquired by the Commission, as follows:

Year	Power Company	Transmission Company	
1918	$151,506	$30,000	P.W.
1919	147,441	30,000	p.27
1920	145,255	30,000	WJP.
1921	155,057	30,000	p.47
1922	122,956	30,000	

The aggregate sums, respectively, which would be provided to the maturity of these issues, for their retirement on the above basis, of an annual provision of approximately $150,000 by the Power Company and of $30,000 by the Transmission Company, are given below together with the bonds outstanding October 31st, 1921:

been appropriated out of tax revenue for personal use, that tax revenue does not in reality have emigrated to the extent of about $840,000.00 in the end of 1912, and about $720,000.00 in the end of 1920.

It would seem to be probable to show the relationship for the residents of the state of the Electric Power Company and of the Atlantic Transmission Company in direct operating change, as is done in the case of the existing rate structure to relate the basis of the Electric Energy Commission and to get the rate minimum for the construction of the joint pipe line extension.

Compare the existing rate structure into base rate via the treatise of the Rate Authority Bond Issues, since the rate the companies were required by the Commission, as follows:

Year	Power Charge	Transmission Charge
1910	$141,320	$24,200
1911	147,411	30,000
1912	120,322	30,000
1921	102,047	30,000
1922	102,018	30,000

The expense some, respectively, which would be provided to the authority of their income. Our rate estimate as the above basis, of an annual provision of expenditure $120,000 by the Power Company and of $30,000 by the Transmission Company, are given below together with the rate operating factor 91%, 1921:

Particulars	Power Co.	Transmission Co.	
First Mortgage Bonds outstanding October 31,1921	$9,218,000	$1,650,000	
The aggregate approximate sum on above basis which would be provided to maturity of bonds	3,150,000	690,000	P.E. p.27
Deficiency in provision for retirement of bonds through sinking funds, on above basis	$6,068,000	$940,000	
Number of sinking fund instalments to maturity of bonds	21	23	

The foregoing figures would, of course, be modified should the Trustees find it impracticable to adhere to the previous practice of purchasing bonds for retirement within the terms specified in the respective agreements. In that event the interest accretions from investment in other securities would be available in the hands of the Trustees for purposes of the sinking fund.

It should be mentioned in connection with the authorized forty year bond issue of $2,000,000 of the Transmission Company that the sinking fund provision of $30,000 per annum, exclusive of any interest accretions, would aggregate only $1,200,000 over the life of the bonds. P.E. p.28

The sinking funds, as outlined above, will be inadequate for the retirement of the bonds at maturity in the amount of approximately $7,000,000, and a means of

Institutions	Issue No.	Transportation No.
First Mortgage Bonds		
retaining interest at 4½% the appropriate apportionment on which bonds which would be provided in maturity of years	4,[illegible],000	4,[illegible],000
	3,[illegible],000	[illegible]
sufficient to provide for continuance of bonds through sinking fund, on above basis	4,[illegible],000	[illegible]
number of sinking fund instalments maturing at issue	23	23

The corporation's income would, of course, be modified since the Treasury fund is inappropriable to address to the payment purposes of paragraphs 2-made the distinguishing within the first operation is the requisite adjustment. In that event the interest conversion from investment is what assertions would be available in the issues of the Treasury for purposes of the sinking fund.

It should be mentioned in connection with the retained half year fund issue of $4,000,000 of the Dominion Company that the sinking fund provision of $[illegible] per annum, assuming of our interest arrangements, would accumulate only $1,[illegible],000 over the life of the issue.

The sinking funds, on existing basis, will be inadequate for the retirement of the issue at maturity in the amount of approximately $4,[illegible], and a minus of

financing this deficiency will require to be provided before the bonds become due.

The sinking fund in respect of the $8,000,000 issue of the Commission is provided on the basis of thirty-seven years, the remaining life of the debentures, while that in respect of the $3,200,000 issue of the Commission, is on approximately a forty-one year basis, whereas the bonds mature twenty years from date of issue. With reference to this latter issue the financing of the deficiency will require consideration before the maturity of the bonds.

Reserve for Contingencies

A study of the accounts of the Ontario Power Company and the Ontario Transmission Company, indicates that the reserve for contingencies has not been provided on the same basis as for the other systems where a charge of approximately 25¢ per year per horse-power sold is made together with certain other provisions, but in this case it is apparently in the nature of a provision for outstanding claims or accrued liabilities with the exception of an amount of $72,935.36 transferred from the renewal reserve as of October 31st, 1922. At October 31st, 1922, the amount at the credit of the reserve for contingencies was $527,684.30 made up as follows:

WJF. p.49

financing. This definitely will compelle us to preserve intact the Guaia Bayone one.

The single dam is designed at the 70,000,000 level of the Tonsinlos is greatest on the basis of strategic parts, the remaining life of the structure, while that in regards of the 50,000,000 items of the Tonsinlos, is an approximate a twenty-one year basis, whereas the lower storage years then are of items. With reference to this latter item the diminished of the authority will serve conservation before the majority of the people.

Report for Tonsinlos

A study of the contents of the Ontario Power Company and the Ontario Transmission Company, indicates that the reserve for depreciation has not been provided on the same basis as for the other systems which a study of approximately 5% per year per transmission will is more together with certain other provisions, but in this case it is apparently in the nature of a provision for anticipating claims or another institution with the exception of a amount of $25,000,00 transferred from the reserve fund reserve as of October 31st, 1922. As October 31st, 1922, the amount of the credit of the reserve for depreciation was $227,124.04 made up as follows:

In respect of estimated additional water rentals payable to the Queen Victoria Niagara Falls Park Commission	$327,759.46	
In respect of claim against J. J. Albright for sinking fund payment	87,575.83	CC&D WHB.
In respect of claim against Niagara, Lockport & Ontario Power Company .	29,413.05	
Reserve for bad debts applying against amount owing by Department of Railways and Canals	10,000.00	
Balance transferred from renewal reserve available to meet future expenses of a contingent nature	72,935.96	
Total Reserve.	$ 527,684.30	

It will be noted that if the Commission is obligated to pay the amounts set aside for specific purposes as noted above, there will remain only $72,935.96 to meet future contingencies of an unknown nature. While a second catastrophe such as the accident on April 20th, 1922, is not probable, the accident furnished a striking proof of the advantages there would be in having a reserve fund for contingencies to cover accidents, although it might be considered unreasonable to have a contingency fund of sufficient magnitude to cover the total cost of an accident which might wreck a large portion of the plant. It would, therefore, seem wise to provide for some contingency fund in addition to that now set up on the books. WJF. p.50

Park Commission	$227,769.44
In payment of previous indirect water rentals paid in the Great Fraser Rights Company Limited	
In payment of claim against J. J. Albright for missing truck payment	84,870.83
In respect of claim against Eldgers. Lodgment & Bunkle Power Company .	23,414.00
Reserve for bad debts applying against amount owing by Department of Railways and Canals	15,000.00
Balance transferred from railway reserve available to meet future expenses of a continuing nature	74,592.23
Total Revenue. . . .	$ 227,769.44

It will be noted that if the Commission is allowed to pay the wounds out which for specific purposes in total above, there will remain only $74,592.23 to meet future requirements of an ordinary nature. While a second enterprise such as the building on April 20th, 1918, is not probable, the Commission requires a working power of the advantage which would be in having a reserve from its earnings to cover emergencies. Although it might be considered unnecessarily in view of a particular emergency to have the entire sum of an emergency which might arise a large portion of the plant. It would, therefore, seem wise to provide for some contingency that is sufficient to tide over any up or the years.

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P.20

Balance Sheet

The following is a summary of the assets and liabilities of the Ontario Power Company and the Ontario Transmission Company as at October 31st, 1922;

ASSETS

Plant, Real Estate, Transmission Lines, Distributing Stations and Rights, Franchises, Goodwill, etc.	$25,132,427.40	
Third Pipe Line, including additional generating equipment	3,514,676.62	
Sundry Equipment	42,518.86	
	$28,689,622.88	
LESS -		
Capital Stock of the Ontario Transmission Company, Limited..	1,000,000.00	
Total Capital Assets		$27,689,622.88
Materials and Supplies		40,926.74
Current Assets - Accounts Receivable, Cash, etc.		753,941.06
Claim against J. J. Albright		295,633.20
Deferred charges to future operations unamortized bond discount, American exchange and prepaid insurance		1,286,265.43
Total Assets		$30,066,389.31

Balance Sheet

The following is a summary of the assets and liabilities of the Security Power Company as the twenty transmission Company as at August 31st, 1928:

ASSETS

Plant, Real Estate, Transmission Lines, Distributing Stations and Rights, Franchises, Goodwill, etc.	$25,126,847.42
Field Ore Line, Insulating material connecting equipment	3,814,675.42
Power Equipment	72,312.84
	$29,009,833.18
LESS -	
Capital Stock of the Company.	
Transmission Company, Limited..	1,222,000.00
Total Capital Assets	$27,787,833.18
Materials and Supplies	40,920.74
Current Assets - Accounts Receivable, Cash, etc.	749,822.08
Claim against Mr. J. Albright	430,000.00
Reserve charges to Income Operations unamortized bond discount, Amount authorized but not yet issued	1,000,000.00
Total Assets	$29,008,576.00

LIABILITIES

Capital Stock - Ontario Power Company		$10,000,000.00
Bonds and Mortgages:		
1st Mortgage 5's due Feb.1,1943, of the Ontario Power Company	$9,092,000.00	
1st Mortgage 5's due May 1,1943, of the Ontario Transmission Company, Limited	1,599,000.00	10,691,000.00
Hydro-Electric Power Commission:		
Cash advanced for construction of Third Pipe Line	3,514,676.62	
6%, 1941 Bonds issued by Commission for the purpose of retiring the 1921 issue of the Power Company, together with accrued interest thereon	3,267,856.16	
Accrued interest on $8,000,000.00 Bonds issued by the Commission to cover the purchase price of the capital stock of the Power Company	80,000.00	
Amount owing on current account ..	328,508.05	7,191,040.83
Accounts payable and accrued charges including accrued interest on Power Company Bonds		188,172.60
Reserve set aside to cover claims made by the Queen Victoria Niagara Falls Park Commission,also for contingencies		527,684.30
Provision to cover accrued portion of sinking funds to October 31, 1922		21,557.70
Reserve for Renewals		1,387,736.86
Surplus		59,197.03
T O T A L -		$30,066,389.31

SCHEDULE

Original Debt - Ontario Power Company		$10,000,000.00
Added for Interest:		
As Debtor's a due 28.1.1926, of the Ontario Power Company	$7,800,000.00	
As Mortgagee's a due May 1.1923, of the Ontario Transmission Company, Limited	10,000,000.01	
Hydro-Electric Power Commission:		
Cash advanced for construction of Point Pelee line	3,314,272.16	
Cash loaned by Commission for the purpose of repaying the 1921 loans of the Power Company, together with accrued interest thereon	3,327,322.12	
Cash loaned by the Commission to enable the payment prior to the capital stock of the Power Company	50,000.00	
Amount owing on current account ..	50,828.02	7,142,422.31
Income Tax		120,172.[illegible]
Including accrued interest to Power Accounts payable and deferred charges		[illegible]
Accounts receivable for construction work by the Ontario Electric Power Commission		[illegible]
Advance not taken to date under which the Commission may be called upon to advance		[illegible]
Standing Taxes to October 31, 1926		[illegible]
Provision in case annual public or Commission's Accounts for Renewals		1,247,[illegible]
Surplus		[illegible]
TOTAL -		$[illegible]

Results of Operation

The excess of revenue over expenses as shown by the books up to October 31st, 1922, amounted to $59,197.03 after setting aside reserve for renewals, sinking funds and contingencies as previously outlined. It is impracticable to furnish operating accounts for each of the periods from August 1st, 1917, to October 31st, 1922, owing to the numerous adjustments made by the Commission and as the operating results are contingent upon the ultimate settlement of claims made by the company, and also standing against it at October 31st, 1922. However, as an illustration of the revenue received and the expenses in connection with operating the company, the following brief summary of the operating account for the fiscal year ending October 31st, 1922, is submitted:

Expenses

Operating and administrative expenses	$1,403,010.48	
Provision for renewals	116,491.96	
Bond interest	746,907.66	
Portion of discount on bonds amortized	46,244.04	CG&E
Portion of American exchange amortized	17,907.84	1922
Interest on cash advances re Third Pipe Line	196,743.86	Accts.
Other interest	42,279.90	
Provision for sinking funds	195,264.36	
Provision for interest on $8,000,000.00 bonds of the Commission	328,076.42	
Total Expenses	$3,092,926.52	

which were met by the following revenues:-

Details of Expenditure

The amount of revenue that happened to flow by the basis up to October 31st, 1922, amounted to $25,177,00 after adding audit service for receivers, winding funds and management on provisional basis. It is impossible to provide operating accounts for each of the periods June 1st, 1917, to October 31st, 1922, owing to the accounts having been kept by the Commission and as the operating results are contained upon the rightness estimated of claims made by the company, and also showing details it is to October 31st, 1922. However, as an illustration of the revenue received and the expenses in connection with operating the company, the following brief summary of the operations account for the first year ending October 31st, 1922, is submitted:

Expenses

Operating and administrative expenses	$1,445,314.64
Provision for renewals	110,491.32
Bond interest	714,977.12
Premiums of fidelity on bonds amortized	48,344.04
Portion of furniture amortized	17,707.04
Interest on such advances as THEY THE LINE	194,142.81
Other income	42,470.30
Provision for sinking funds	192,894.02
Provision for insurance on $4,050,000.00 bonds of the Commission	202,410.00
Total Expenses	$2,969,350.29

which were met by the following revenues:-

From sundry customers	$1,357,119.80	
From St. Catharines and other municipalities in that district	78,290.21	GG&D
Thorold System	20,905.67	1922
Miscellaneous Revenue, including profit on bonds redeemed	16,799.35	Accts.
	$1,473,115.03	
Revenue from Niagara System representing the difference between revenue received from other sources and total expenses as above	1,619,811.49	
Total Revenue	$3,092,926.52	

From the above it will be noted that the company is being operated on a cost basis, and that the Niagara System is bearing all expenses of such operation except those met by revenue arising from other sources.

The following table shows the revenue from power sales separated as between undertakings of the Commission and outside interests for the various periods of operation between August 1st, 1917, and October 31st, 1922. The figures shown in this statement and the ones following, relating to operating expenses are subject to adjustment in respect to the revision in the renewal reserve made by the Commission subsequent to the close of the fiscal year ending October 31st, 1922.

Item sundry receipts	$1,347,111.81
Item 38. Customs and other municipal-	
ities in war district	78,643.61
Thereto Syrian	80,908.67
Miscellaneous Income, including	
profit on bonds redeemed	18,155.32
	$1,474,111.41
Revenue from Mixture System re-	
presenting the difference between	
revenue received from other sources	
and total expenses as above	1,414,471.41
Total Revenue	$2,888,582.82

Upon the above it will be noted that the amount is being expended on a cash basis, and that the Mixture System is barring any expenses of such particular nature that may be received during from other sources.

The following table shows the revenue from liquor sales compared on between subsidiaries of the Commission and outside interests for the various periods of operation between August 1st, 1917, and October 31st, 1922. The figures shown in this statement and the note following, relating to operating expenses are subject to adjustment in respect to the variation in the revenue figures made by the Commission subsequent to the close of the fiscal year ending October 31st, 1922.

Table of Annual Revenues

P.W.55
C&D
1922
Accts.

Particulars	15 months ending Oct.31,1918	Year ending October 31, 1919	1920	1921	1922
Niagara System	$1,022,611	$ 893,814	$1,112,818	$1,621,420	$1,807,730
Sundry Hydro Undertakings	93,315	64,091	69,749	90,934	99,196
Outside Interests	1,636,154	1,240,516	1,318,055	1,295,450	1,357,120
Total Revenue	$2,752,080	$2,198,421	$2,500,622	$3,007,804	$3,264,046

The revenue per horse-power from the various classes of customers and the various revenues for each classification of horse-power is as follows:

Revenue per Horse-power

	Fiscal year ending October 31st, 1918	1919	1920	1921	1922
Power sold to H.E.P.C.	$9.15	$9.36	$9.72	$11.55	$17.55
Power sold to private Cos.	12.82	12.25	13.97	14.33	12.57
Power sold for export	12.70	12.60	12.97	12.76	12.84
Average	11.00	10.88	11.55	12.50	15.17

WJP.
p.51.

The following is a comparison of the average revenue per horse-power billed with the total cost per horse-power billed for each of the above years:

Average revenue per horse-power billed	$11.00	$10.88	$11.33	$12.50	$15.17
Average cost per horse-power billed	10.99	10.21	11.58	12.48	15.10

Table of Annual Revenue

Municipality	Rating	Other rating taken in.			
	1st March 1918.	1919.	1920.	1921.	1922.
Stagers Prison	£1,024,221	£ 945,816	£1,122,612	£1,225,889	£1,307,720
Beauty Spice Warehouse	£2,312	£2,021	£4,740	£6,944	£3,324
Orinda Industrs	1,445,320	1,240,772	1,310,187	1,309,420	1,227,320
Total	£3,471,853	£2,188,609	£2,439,539	£2,541,253	£2,538,364

The revenue per inhabitant from the various classes of ratepayers and the average revenue for each classification of inhabitant is as follows:

Average per Inhabitant

Annual rate taken- Site.

	1918.	1919.	1920.	1921.	1922.
Farms held in F.S.M.	£4.12	£2.34	£2.32	£11.20	£17.24
Farms held in Prime Cos.	14.02	13.04	12.17	14.21	11.17
Farms held for Sugar	13.78	12.20	12.32	13.72	12.04
Average	12.10	12.40	11.28	12.20	12.12

The falling in a comparison of the average ra-

tings for Sugar-Farms filled with the taking over per Sugar-

farms filling the each of the above period

Average rateable

per Sugar-farm

Filled	£12.10	£10.24	£11.32	£12.20	£12.12
Average rate per Sugar-farm					
Filling	10.24	10.02	11.28	12.40	12.22

The following statement, showing the detailed costs per horse-power billed, illustrates in what respects and to what extents the operating costs and fixed charges have increased:

Detailed Costs per Horse-power Billed

	Fiscal year ending October 31					
	1918	1919	1920	1921	1922	
Power purchased	$2.65	$1.35	$ .57	$2.33	$3.17	WJP.
Operating Costs	1.07	1.33	1.35	1.27	1.45	p.60
Maintenance	.36	.59	.72	.67	.89	
Overhead & General Expense	.77	.89	.75	.57	.69	
Interest, Discount and Exchange	5.58	5.66	6.44	6.17	6.25	
Reserve Accounts	.36	.39	1.77	1.47	2.65	
Total -	$10.99	$10.21	$11.58	$12.48	$15.10	

Dividends paid by the Ontario Power Company

Dividends paid by the Ontario Power Company together with interest for the twenty-seven months ending October 31st, 1922, on the $8,000,000 debenture issue of the Commission, aggregated $1,748,651.19 as shown below:

Dividends paid in periods ending:			
October 31st, 1918	$400,000.00		
1919	254,780.56		
1920	365,794.21	$1,020,574.77	P.W. p.3
Interest for 15 months ending October 31st, 1921, on $8,000,000		400,000.00	1921
Interest for 12 months, ending October 31st, 1922, on $8,000,000 including American exchange charges		328,076.42	
Total -		$1,748,651.19	

This amount has been used by the Commission to meet interest charges on the $8,000,000, 4%, 40-year debentures issued by it in payment of the capital stock of the Ontario Power Company, with the exception of $395.55 paid as dividends to the minority stockholders of the company during the years 1918, 1919 and 1920. Stock formerly owned by the minority stockholders has now been acquired by the Commission.

Power Purchased

The following table shows the power purchased by the Ontario Power Company during the period from August 1st, 1917, to October 31st, 1921:

Particulars	15 months ending Oct. 31, 1918	Year ending October 31, 1919	1920	1921	
Toronto Power Company					
Output of one machine	$267,760	$132,802	$125,073	$216,450	
Cost of power furnished under Power Controller's orders	395,661	140,583	-	-	P.W.
Additional Power	-	-	-	42,455	p.36
	$663,421	$273,385	$125,073	$258,905	
Canadian Niagara Power Company -					
8942 h.p.at $18.00	-	-	-	160,960	
8217 h.p.at $16.20	-	-	-	133,109	
Exchange	-	-	-	16,317	
T o t a l	$663,421	$273,385	$125,073	$569,291	

Expenditures due to Accident

The expenditures covering repairs to power house in the year ending October 31st, 1922, in connection with the accident which occurred on April 20th, 1922, amounted to $97,000.00 and of this amount $64,000.00 has been charged against the renewal reserve, and the balance of $33,000.00 has been charged into operations in this year. CG&D 1922 Accts

This amount has been used by the Commission as least interest charges on the $2,250,000, 40, 30-year debentures issued by it in payment of the majority stock of the Tarrant Power Company, with the principle of $250,000 paid on disposal by the minority stockholders of the company during the year 1927, 1929 and 1932. Stock formerly owned by the minority stockholders has been acquired by the Commission.

Power Investment

The following table shows the power investment in the Electric Power Commission during the period from January 1st, 1927, to December 31st, 1931.

Particulars	Capital Outlay	Other Assets	Other Assets December 31, 1931
	1927 to 1931	1927	
Toronto Power Company			
Output of the Ontario Power Co. and power Commission which under Power Commission's direct administration	$147,740	$141,801	$129,422 $121,420
	-	-	-
	-	124,022	-
	-	-	-
Transmission Systems			
Power Systems -			
Niagara Falls	-	-	- 126,023
Niagara Falls	-	-	- 124,109
Hydro	-	-	- 12,314
Total	3429,221	$272,302	$123,422 $320,801

Transmission Lines in Industry

The Commission entering engine to power built in the year ending October 31st, 1932, in connection with the Niagara Falls Power Company on April 30th, 1932, amounting to $27,102.02 and of this amount $24,490.36 was used in building electric transmission, and the balance of $2,610.41 has been charged into operations in this year.

TAXES

City of Niagara Falls

Previous to the purchase the Company had, by an agreement with the City of Niagara Falls, a fixed taxation of $16,000 a year for a period of ten years. The agreement terminated in 1916 and the City then proceeded to increase the assessment. The Commission acquired the Company in 1917 and paid taxes on the increased assessment. The Company strongly objected to the assessment in each of the years 1918, 1919 and 1920 and the matter was discussed with the Government. No action was taken, however, so the taxes for these years were paid in accordance with the bills submitted. In 1921 the Company refused to pay the tax bill for that year and appealed the assessment of $2,771,000. Before the matter reached the Appellate Division, an agreement was entered into whereby the Company agreed to pay the sum of $98,657.42 for the 1921 taxes, thus effecting a saving of $9,207.90, the difference between $107,865.32--the amount of the original bill--and the sum actually paid

Ev. 2662 2734

The last mentioned agreement forms part of a Special Act passed May 4th, 1922, (12-13 Geo.V,Chap.120) ratifying and confirming by-law No.1076 of the Corporation of the City of Niagara Falls. The by-law referred to was for the purpose of approving an agreement made between the City of Niagara Falls, the Company and the Commission.

Power Comm Act 1922 p.338

TEXT

City of Niagara Falls

Prefixed to the petition was the TEXTOUT Act, by an agreement with the City of Niagara Falls, a fixed annuity of $14,000 a year for a period of ten years. The agreement terminated in 1922 when the City then proceeded to increase the assessment. The municipalities argued and Company is liable and paid taxes on the increased assessment. The Company strongly objected to the assessment in part of the years 1919, 1917 (of 1920 and the matter was discussed with the Government. In public the issue, however, is the issue for three years more paid in accordance with the bill mentioned. In 1921 the company refused to pay the tax bill for that year and appealed the assessment at $3,771,000. Before the matter reached the Appellate Division, an agreement was entered into whereby the company agreed to pay the sum of $30,000.00 for the 1921 taxes, thus effecting a saving of $3,687,000; the difference between $187,500.00--the amount of the original bill--and the sum actually paid.

Ibid. 1922 p.320

The last mentioned agreement came part of a Special Act passed May 4th, 1922, (12-13 Geo.V,Chap.113) ratifying and validating by-law No.1078 of the Corporation of the City of Niagara Falls. The by-law referred to was for the purpose of ratifying an agreement made between the City of Niagara Falls, the Company and the Ontario.

whereby the assessment on the plant was fixed for a period of ten years from January 1st, 1922, at $2,500,000, (the assessment in 1917) and the maximum rate thereon at 30 mills on the dollar. This assessment is for all purposes, inclusive of taxation for school purposes, business or other general or special municipal taxation but does not affect local improvement rates or taxes, imposed or levied upon the said properties. Ev. 2041

Township of Stamford

The Company is subject to taxation in the Township of Stamford also, as the headworks, pipe lines, the transformer station and part of the power station lie within the boundaries of the township. In 1903 an agreement between the Company and the township was entered into, fixing the assessment for a twenty-one year period at $100,000. The Company contended that this was the assessment for all purposes, but this view was not upheld by the Privy Council who finally adjudicated upon the matter. Ev. 2662 2663 Mr. Pope Mr. Littlejohn.

As a result of this decision the township was at liberty to place a much higher assessment on the Company's works for the purpose of school taxation. Full advantage was taken of the privilege so that in 1918 the assessment had reached $1,300,000. Since the Commission acquired the Company the taxes imposed have been disputed each year but eventually paid. In 1919 the taxes paid by the Company

Thereby the assessment on the plant was fixed for a period of ten years from December 1st, 1920, at $4,245,000, (see agreement in 1919) and the maximum rate interest at 8% mills on the dollar. This arrangement is for all purposes, the equivalent of exactly the model purchase, municipal or state profit or general municipal taxation but does not without local improvement rates or taxes, impose or levied upon the site properties.

Transfer of Interest

The Company in subject to taxation in the Township of Stanford also, as the Assessor, Mr Ritter, the Commissioner stated and CONFIRMED the power charged the entire the assessment of the township. In 1920 an agreement between the Company and the township was entered into, fixing the assessment for a twenty-year period at $107,000. The Company contended that this was the assessment for all purposes, but only also was not agreed to the City Council who finally adjudicated upon the matter.

In a report of this Inquiry the township was at liberty to place a much higher assessment on the Company's water and the property of other municipalities. This advantage was taken of the privilege on that in 1919 the assessment had reached $1,400,000. Since the Territories adjoining the Company are large interests have been directed much lower and exceedingly low. In 1919 the taxes paid by the Company

were as follows:

General Taxes	$1,320.00	
School "	6,646.59	$ 7,966.59

In 1922:

General Taxes	$ 2,580.00	
School "	11,737.59	$14,317.59.

The period for the fixed assessment of $100,000 expires in 1924. A memorandum on the file of the Commission in noting the taxes paid for 1919, states that after 1924 the taxes will be increased to the extent of approximately $17,000 annually.

The question of a fixed taxation after the expiration of the above mentioned agreement in 1924 has been discussed by the Company and the Township and it is expected that the matter will soon be satisfactorily settled and confirmed by Statute as in the case of the City of Niagara Falls. Ev. 2981 2982

Economic Effect of the Accident on April 20th, 1922

As stated on page 6,(Hist.Sk.) of this report an accident occurred on April 20th, 1922, which resulted in the destruction of units Nos. 15 and 16 and considerable damage by water to a number of other units,causing a very large temporary reduction in the capacity of the plant. Mr. Walter J. Francis in his report on the Ontario Power Company includes "A Study of the Economic Effect of the Accident on April 20th, 1922, at the Plant of The Ontario Power Company of Niagara Falls," commencing on page 64 of the report.

were as follows:

General Taxes	$1,[illegible]	
School "	[illegible]	$ 7,[illegible]

In 1921:

General Taxes	$ 3,[illegible]	
School "	[illegible]	$[illegible]

The period for the fixed assessment of $100,000 expires in 1922. I understand in the city of the Commission is asking the issue paid for 1921, where that after 1922 the taxes will be increased in the amount of approximately $17,000 annually.

The question of a fixed taxation after the expiration of the [illegible] agreement in 1926 has been discussed by the company and the Township and it is expected that the matter will soon be satisfactorily settled and confirmed by Statute as in the case of the City of Niagara Falls.

Treasury Office of the Assistant
on April 20th, 1921.

As stated on page 6,[Print.RK.] of this report an accident occurred in April 20th, 1921, which resulted in the destruction of only 1/4. It was it was impossible to bring by water to a number of years ago,causing a very large temporary reduction in the capacity of the plant. Mr. Taylor J. Travis in his report on the Ontario Power Company in April 7th of the Commission Effect of the Accident on April 20th, 1920, on the Plant of the Ontario Power Company at Niagara Falls," commencing on page 21 of the report.

In this Study Mr. Francis has used four cases as follows:

Case No.1. Assume the damaged plant to be replaced with the minimum amount of machinery which would produce the same output as before the accident.

Case No.2. Assume the damaged plant to be replaced by one unit of somewhat larger capacity than one of the destroyed units, to make the plant of the same capacity as before.

Case No.3. Assume the damaged plant to be replaced by two units of identical capacity with those destroyed.

Case No.4. Assume that neither of the damaged units would be replaced and that the third pipe line would be adapted to serve the remaining fourteen units, amortizing the cost of the unproductive portion of the third pipe line extension during its estimated useful life of thirty years.

The four cases are considered in great detail in the report, and in summing up the result of the Study, Mr. Francis states:

> "From the above outline it will appear that the estimated cost of the accident is determinate within certain limits only, depending upon the viewpoint taken. It seems reasonable to assume that the limits of cost are between $50,000 and $650,000. Based on the actual procedure now being followed, and assuming that the new unit will practically restore the former output of the plant, and charging the whole of the carrying charges on the unproductive capital against the accident up to the time of the replacement of the damaged plant, it would be fair to place the total cost of the accident at about $300,000 in round figures."

In this study Mr. Francis has used four cases as follows:

Case No.1. Assume the damaged plant to be replaced with the minimum number of machinery units which would produce the same output as before the accident.

Case No.2. Assume the damaged plant to be replaced by one unit of somewhat larger capacity than one of the destroyed units, to make the plant of the same capacity as before.

Case No.3. Assume the damaged plant to be replaced by two units of identical capacity with those destroyed.

Case No.4. Assume that neither of the damaged units would be replaced and that the entire plant line would be adapted to serve the remaining functions and, (assuming the cost of the unprofitable portion of the entire plant equipment during its estimated useful life of twenty years.

The four cases are considered in great detail in the report, and in summing up the results of the study, Mr. Francis states:

"From the above results it will appear that the estimated cost of the accidents is determined within certain limits only, depending upon the discount rates. It seems reasonable to assume that the limits of cost are between 600,000 and 1,200,000. Based on the actual procedure now being followed, and assuming that the new unit will probably restore the former output of the plant, and changing the whole of the machinery on the assumption against against the assistance in the time of the replacement of the damaged plant, it would be fair to place the total cost of the accident at about 1,000,000 in round figures."

G E N E R A L R E L A T I O N S

Mr. J. A. McIndrew, K.C., has prepared a memorandum entitled "The Purchase and Operation of the Ontario Power Company of Niagara Falls from the Legal Standpoint." The memorandum deals with the subject in great detail and the following information is largely based on or quoted from it. Additional information has also been introduced.

Relations with Government

The Commission was authorized by 7 Geo.V, C.20, S.3 (now Section 8(g) of the Power Commission Act) to

> "acquire by purchase or otherwise on any terms and hold shares in any incorporated company carrying on the business of developing, supplying or transmitting electrical power or energy; and in connection with any such acquisition enter into any covenant or covenants, agreement or agreements and pay for any such shares either in cash or bonds, debentures or other securities of the Commission, and guarantee, or covenant, or agree for or in respect of the payment or performance of any bonds, debentures, securities, contracts or obligations of any company shares in which are so acquired, or of any company shares in which are held by any company in which shares are so acquired."

This amendment of the Act was enacted specially for the purpose of acquiring control of the Ontario Power Company - a company incorporated by special Act of the

[illegible]

Mr. A. J. McAdam, K.C., has prepared a memorandum entitled "The Duties and Powers of the Ontario Power Company of Niagara Falls from the Legal Standpoint." The memorandum deals with the subject in great detail and its principal conclusions is briefly based so as quoted from it. Additional memoranda have been introduced.

Initiation with Government

The Ontario Government authorized by I Geo.V, 2.Ch. 1.3 (now Revised Stat. of Ontario Consolidation 1914) to

"negotiate by purchase or otherwise on any terms and with owner in any incorporated company carrying on the business of hydro-electric, supplying or transmitting electrical power or energy and in connection with any such acquisition enter into any covenant or agreement, expressed or express- ed and pay for any such shares either in cash or bonds, debentures or other securities of the municipality, and generally, or specially, or partly for or in respect of the payment or performance of any bonds, debentures, securities, warrants or obligation of any company shares in which are acquired, or of any company whose shares are so acquired."

This amendment of the Act was enacted expressly for the purpose of acquiring control of the Ontario Power Company - a company incorporated by special act of the

Dominion Parliament. In pursuance of the power conferred upon the Commission by this amending Act of 1917, it entered into an agreement for the purchase of all the outstanding shares of the Ontario Power Company. The properties of the Ontario Power Company and of its subsidiary, the Ontario Transmission Company, were at the time encumbered by mortgages to secure bond issues of the two companies to the amount of $14,450,000. In addition to the purchase of these shares, the agreement entered into by the Commission provided for the guarantee by the Province of payment of the bonded indebtedness of the Companies as and when the same fall due. The Province was a party to and executed this agreement of purchase. The consideration for the purchase of the shares or for practically the equity in the properties of the Company, provided for by the agreement, was approximately $8,000,000, payable in bonds of the Commission guaranteed by the Province. The consideration was paid as provided.

In effect then the Commission acquired for $8,000,000, which amount was paid in bonds of the Commission guaranteed by the Province as to the payment of principal and interest, the shares of a company having assets of the book value of $10,000,000, after deducting outstanding bonds, other liabilities, and reserves. The outstanding bonds of the Company in the amount of $14,450,000 are payable by the Company (The Commission) and the payment thereof is guaranteed by the Province.

Ontario Territories. In pursuance of the power mentioned upon the Commissioners by Sale mentioned Act of 1917, it entered into an Agreement for the purchase of all the outstanding shares of the Ontario Power Company. The properties of the Ontario Power Company and of its subsidiary, the Ontario Transmission Company, were at the time encumbered by mortgages to secure bond issued of the two companies to the amount of $14,000,000. In satisfaction of the purchase of these shares, the aforesaid interest into of the Commissioners provided for the payments by the Province of payment of the bonds indebtedness of the Companies as and when the same fell due. The Province was a party to and executed this Agreement of purchase. The consideration for the purchase of the shares of the Ontario Power Company is the properties of the Company, provided for by the agreement, and approximately $3,000,000, payable in bonds of the Commission guaranteed by the Province. The consideration was paid at Toronto.

In order that the Commission acquired the $4,000,000, which amount was paid in bonds of the Commission guaranteed by the Province and to the payment of principal and interest, the Province of a company having assets of the such value of $12,000,000, after deducting outstanding bonds, other liabilities, and reserves. The outstanding bonds of the Company in the amount of $14,000,000 are payable by the Company (the Commission) and the principal thereof is guaranteed by the Province.

Such a guarantee by a purchaser of control of a company is unusual and in this case the guarantee by the Province substantially enhanced the value of the bonds to the holders thereof.

The following is a list of guarantees given by the Province in respect of bond and other liabilities assumed by and bonds issued by the Commission in connection with the Ontario Power Company to March 31st, 1923:

Borrowings from the Bank of Montreal in connection with construction of third pipe line	$1,200,000
Forty-year 4% debentures of the Commission given in purchase of the Capital Stock of the Ontario Power Company - due 1st August, 1957	8,000,000
Twenty-year 6% debentures (due in 1941) issued by the Commission for the purpose of retiring debentures of the Ontario Power Company which matured in 1921	3,200,000
First Mortgage Bonds of the Ontario Power Company, due 1st February, 1943	9,092,000
First Mortgage 5% Bonds of the Ontario Transmission Company, Limited, due 1st May, 1945	1,599,000
	$23,091,000

Relations with the Commission

The Commission named as purchaser in the agreement owns and controls the capital stock of the Power Company, and by virtue of such ownership has transferred fifty shares of stock to seven members or officers of the Commission to qualify them as directors of the company.

Such a guarantee by a purchaser of control of a company is natural and in this case the guarantee by the Italian capitalists enhanced the value of the bonds to the holders thereof.

The following is a list of guarantees given by the Italians in respect of bond and other liabilities assumed by and bonds issued by the Consolidation in connection with the Ontario Power Company in March 1922:

Guarantee from the Bank of Montreal in ma-
- turities with sinking fund at rates ranging from $1,500,000
- 1st March, 1927 ..... $ 6,000,000

Guarantee of debentures of the Consolidation given in pursuance of the Capital Stock of the Canadian Power Company - due 1st March, 1927 ..... $ 6,000,000

Twenty-year 6% debentures issued in 1921 issued by the Consolidation for the purpose of retiring debentures of the Ontario Power Company which matured in 1921 ..... $1,000,000

First mortgage bonds of the Ontario Power Company, due 1st February, 1943 ..... $ 3,000,000

First mortgage 6% bonds of the Ontario Power Company, Limited, due 1st May, 1940 ..... $ 3,333,000

$20,333,000

Dealings with the Municipalities

The Consolidation moves in preparation in the expansion work and assists the Legislative Stock of the Power Company, and by virtue of such ownership has transferred fifty shares of stock to serve members or officers of the Consolidation to qualify them as directors of the company.

In the event of default of performance of its agreement with the vendors, the Province as guarantor would become liable to the bondholders since they have guaranteed, as a party to the agreement, the debentures issued by the Commission and the performance of the agreement.

With the purchase of the company and the acquisition of the (share) stock, the Commission, in order to comply with the by-laws of the company, transferred fifty shares of stock to members and officials of the Commission, who thereupon were elected directors of the company, and the Board of Directors thus elected appointed the Chairman of the Commission President of the company. The Board of Directors, amongst other things, under sub-section 17, Act of Incorporation of Company, are authorized to make by-laws for the management and disposition of the stock, property, business and affairs of the company, not inconsistent with the laws of Canada and to appoint all officers, servants and artificers and prescribe their respective duties. The directors may also ,from time to time, make by-laws not contrary to law or to the special Act, and, amongst other things, decide the number of directors, their term of service, the amount of their stock qualification and their remuneration, if any.

In the Power Commission Act no express authority is given to the Commission for the transfer by it for any purpose, of shares acquired by it. The right to acquire shares, however, would appear necessarily to involve the right

In the event of default of performance of its agreement with the states, the Federal Government would assume liability to the municipalities which they have contributed, as a party to the agreement, the indemnities issued by the Commission and the performance of the agreement.

With the purchase of the company and the acquisition of the (Ohrdf) assets, the Commission is ready to comply with the by-laws of the company, transferred first shares of stock to members and officials of the Commission, who thereupon were elected directors of the company, and the board is therefore then elected auditors the chairman of the Commission President of the company. The board of directors, amongst other things, under authorization if, has at transferable of company, was authorized to make by-laws for the management and disposition of the stock, property, business and affairs of the company, not inconsistent with the laws of Canada and to appoint all officers, servants and officers and generally their respective duties. The directors may also, from time to time, make by-laws not restricted to law or to the special act, and, amongst other things, decide the number of directors, their term of service, the manner of their election qualification and their remuneration, if any.

In the Town Commission act an express authority is given to the Commission for the transfer by it for any purpose, of shares received to it. The right to consider shares, however, need account.

Responsibility is further the right

to exercise all the rights and powers of shareholders given by the Act of Incorporation of the Company, including the right to transfer and dispose of shares as the holder of the shares, namely the Commission, deems expedient. Thus, while no express authority was given it would appear that the transfer made by the Commission of fifty shares to each of seven individuals was necessary and in the rightful exercise of the duties and powers of the Commission.

These individuals upon being registered as shareholders upon the books of the Company and the issue to them of certificates, become not only prima facie but actual owners of stock absolutely in their own right and were so qualified to be elected and act as directors of the Company. Were this not so all the acts of the Board of Directors since August 1, 1917, would be ultra vires and the corporate existence of the company would be at an end, and all the shares would be worthless.

Although by the transfer the seven directors each holds absolutely in his own right fifty shares, there appears to be no reason to expect that any will transfer his holdings for his own private advantage. In the past when it has been necessary or expedient to change the personnel of the Board of Directors, the shares held by the retiring director have in each case been transferred to and held by the director who has taken his place.

The affairs of the Company, after the acquisition of its shares by the Commission, appear to have been conducted

in the manner usual with such corporations, meetings of the Board were held and the Minutes thereof recorded. Sir Adam Beck, Chairman of the Commission, was from time to time appointed President; the two other members of the Commission, First and Second Vice-President, respectively; Mr. Gaby, Chief Engineer of the Commission, as Engineer, and Mr. Pope, Secretary of the Commission, as Secretary of the Company. Other directors of the Company, who were also officials of the Commission, were appointed as officers of the Company, acting as directors. The following extracts are from Minute Book No.2 of the Company:

"On motion Mr. W. W. Pope's salary to be paid by the Ontario Power Company of Niagara Falls was fixed at $2,000 per annum to take effect October 1st, 1917."

"On motion Mr. F. A. Gaby's salary to be paid by the Ontario Power Company of Niagara Falls was fixed at $2,400 per annum, to take effect October 1st, 1917." (Meeting of Directors, October 17th, 1917)

"Moved by Mr. Lucas, seconded by Col. McNaught, that the salary of the President be increased by the sum of six thousand dollars per annum, such increase to date from the first day of August, 1917, the date on which the control of the Ontario Power Company of Niagara Falls passed into the hands of the Hydro-Electric Power Commission of Ontario." (Meeting of Directors, June 26,1918)

"Upon motion duly made and seconded the salary to be paid to the 1st and 2nd Vice-President was fixed at $2,000 per annum each, the same to take effect from the 14th day of January, 1920, being the date upon which the annual General Meeting was held. Also that $500 of the annual salary paid to W. G. Pierdon is to be charged to the Ontario Power Company but this does not increase the present salary paid to him as Chief Accountant of the Hydro-Electric Power Commission of Ontario." (Meeting of Directors, June 29th, 1920)

The Minutes of the meetings at which these resolutions were adopted by the Directors "were taken as read and approved" at the Annual General Meeting of shareholders held subsequent to the several meetings of Directors, but there does not appear to have been any formal ratification or adoption of the action of the Directors in passing the motions. Messrs. MacInnes and Gilmour appear to be the only Directors for whom no provision was made for payment by The Ontario Power Company.

In accordance with the general intention of the Power Commission Act, it would appear to be quite proper and expedient that the cost of the affairs of the Power Company should be charged to the Company.

The Ontario Power Company is an undertaking of the Commission, the administration of its affairs and operation are part of the duties of the Commission and its officers. In view of this, salaries and remuneration for the service of the members and officers of the Commission in connection with the Company, in exactly the same manner as in all other undertakings of the Commission, must be such as are fixed or warranted by the Act, under which the Commission is created and exists and its members and officers are appointed.

A perusal and consideration of the motions passed at the meeting of the Directors leads to the conclusion that the members of the Commission considered the remuneration paid to them and the Chief Engineer and the Secretary of the Com-

The minutes of the meetings at which these resolutions were analyzed by the Directors "very laboriously and critically" at the annual General Meeting of shareholders held subsequent to the internal wrangling at Directors, let there never not appear to have been any formal resolution or adoption of the action of the Directors in creating the deficit. Shares, bonuses and dividends clearly in the only directors for whom an particular was made for payment by The Ontario Power Company.

In accordance with the general intention of the Power Commission Act, it would appear to be quite proper and assistant that the cost of the efforts of the Power Company should be charged to the Company.

The Ontario Power Company is an undertaking of the Commission; the administration of its affairs and expenditure are part of the duties of the Commission and its officers. In view of their salaries and remuneration for the services of the members and officers of the Commission in connection with the Company, in exactly the same manner as in all other undertakings of the Commission, must be such as are fixed or warranted by the Act, under which the Commission is created and exists and its members and officers are appointed.

A personal and administration of the entire payment at the meeting of the Directors leads to the conclusion that the members of the Commission constituted the promoters and in fact and the chief engineer and the secretary of the Com-

mission was inadequate and must be increased, the increase to date back to certain periods, and that to make the increase, an effective way was to provide salaries to these as officers of the Power Company. The motion relating to the salary of the President provided that "the salary of the President be increased by the sum of six thousand dollars per annum." As prior to this the President was not paid a salary, the increase can only refer to the salary paid him under the provisions of the Power Commission Act.

The motion referring to the salary of W. G. Pierdon provides that $500 of the salary paid him as Accountant of the Commission shall be charged the Ontario Power Company. In connection with the salaries of the 1st and 2nd Vice-Presidents, the motions are so arranged as to provide that the salary authorized is to be paid to them. In the case of Messrs. Pope and Gaby the salaries to be paid by the Ontario Power Company were fixed at $2,000 and $2,400, respectively, and without more specific explanation this is open to the interpretation that these amounts form part of the salaries paid them in accordance with the Power Commission Act and on the same basis as in the case of Mr. Pierdon.

There is no provision in the Statutes or Orders-in-Council for payment to the Chairman and other members and officers of the Commission of any amount beyond the sums mentioned for their services in connection with the works and

duties and responsibilities and must be increased, the Government is duty bound to provide funds, and that to make the increase an effective one and to provide relief to those on salaries at the lower footing. The motion relating to the salary of the President was introduced by the son of an American sailor who became President. It is true the President was not paid a salary, the increase was only refer to the salary paid him under the provisions of the Power Commission Act.

The motion referring to the salary of W. D. Jordon provides that part of the salary paid him as Commissioner of the Canadian Pacific Railway the Ontario Power Company. In connection with the salaries of the Int and Ind Vice-Presidents, the members are so arranged as to provide that the salary authorized is to be paid to them. In the case of General Ogle and Judge Lafleur is to be paid by the Ontario Power Company were fixed at $1,000 and $1,000, respectively, and without more specific explanation this is open to the interpretation that these amounts form part of the salaries paid them in conference with the Power Commission Act and to the same basis as in the case of Mr. Jordon.

There is no provision in the Statutes or Ontario-Quebec for payment to the Chairman and other members and officers of the Commission of any amount beyond the same established for their services in connection with the work and

undertakings of the Commission. The Commission was created and the members were appointed by the Lieutenant-Governor in Council as provided by the Power Commission Act. Unless and until the Act is amended, the Chairman and other members of the Commission are not entitled to receive, and there is no warrant or authority for the payment to them of any amounts in excess of those mentioned in the Power Commission Act for their services as members of the Commission.

Their services as President and Vice-Presidents of the Ontario Power Company are in connection with an undertaking controlled, operated and carried on by the Commission and thus are services as members of the Commission within and covered by the Power Commission Act, which governs the remuneration to be paid for such services. The payment to the Chairman of $6,000 and to each of the other members of the Commission of $2,000 annually out of the moneys of or charged to the Ontario Power Company in addition to the remuneration to them provided by the Power Commission Act, was unjustified and improper.

It has been maintained by members and officials of the Commission that the acquisition of the Ontario Power Company greatly increased their duties and that consequently their salaries should be increased. Their views were not unnatural for additional work and increased responsibility is usually rewarded with greater remuneration. The acquisition of the Ontario Power Company, however, was only one

requirements of the Dominion. The Commission was created and the company was supplied by the Government-interest in Quebec as provided by the Power Commission Act. Unless and until the law is changed, the Chairman and vice chairman of the Commission are not entitled to salaries, and there is no material or authority for the payment to them of any amounts in excess of those mentioned in the Power Commission Act for their services as members of the Commission.

Their services as Trustees and Vice-Trustees of the Ontario Power Company are in connection with an under-taking controlled by the Government and carried on by the Commission and they are serving as members of the Commission within and covered by the Power Commission Act, which governs the remuneration to be paid for such services. The payment to the Chairman of $4,000 and to each of the other members of the Commission of $3,000 annually was at the rate of $4 or charged to the Ontario Power Company in addition to the remuneration to them provided by the Power Commission Act, was unauthorized and improper.

It has been maintained by members and officials of the Commission that the capitalization of the Ontario Power Company greatly increased their duties and that consequently their salaries should be increased. Their views were not acceptable for additional work and increased responsibility is usually rewarded with greater remuneration. The capitalization of the Ontario Power Company, however, has only one

of many factors contributing to the increase in duties, so the additional remuneration should have been secured by amendment of the Power Commission Act. Had this been done no reason could exist for the thought that the officials used their position as directors of the company to obtain increased remuneration without reference to the Legislature.

Relations with Municipalities

In connection with the acquisition and operation of the Ontario Power Company, mention has been made of the approval of municipal corporations having been obtained.

The following is an extract from the evidence given at the Hearing on January 9th, 1923:

Q- Were the municipalities for which you acted as trustee, consulted as to whether or not you should buy the Ontario Power Company?

A.- There was a plebiscite for acquiring the development in the Niagara district in 1917.

SIR ADAM BECK: They voted on it.

MR. GABY: They voted on a plebiscite for acquiring generating plants at Niagara Falls.

Q.- But was there any specific submission to the municipalities for the purchase of the Ontario Power Company?

A.- I should say Yes, because Sir Adam discussed the matter at those various meetings with them on it.

Q.- But was it submitted in a formal way to them?

A.- SIR ADAM BECK: I don't remember the details of what took place at that time.

Q.- And when you say a plebiscite would that be a vote of the ratepayers in each municipality?

MR. GABY: Yes.

Q.- That was done as to the development of power at Niagara Falls?

A.- Some seventy municipalities voted.

Q.- Hadn't that at all reference to the Chippawa development?

SIR ADAM BECK: No, the general policy of generating or acquiring generating plants.

Q.- Was this plebiscite, or the question that was voted on, exactly the same to each of the seventy municipalities?

MR. GABY: Seventy-four, yes.

COMMISSIONER HARRIS: What date was that?

A.- January, 1917.

THE CHAIRMAN: That would be at the municipal elections in January, 1917?

A.- Yes.

SIR ADAM BECK: The municipalities were called together and those matters were generally discussed with them, and they passed resolutions, and so on, but I know it was thought that because of the amounts involved that it would be well to have an expression of public opinion.

THE CHAIRMAN: Mr. Pope, could you let us have a copy of that resolution that was voted on in those 74 municipalities in January, 1917, you will have it available?

MR. POPE: It is on the files, you have seen them all.

COMMISSIONER HARRIS: Did they put the matter up to the municipalities in such a way that they fully understood what they were assuming?

MR. POPE: Yes, I think so, either to generate or purchase enough power.

L.- Let me ask you one a plausibility would that be a view of the employees in such municipality

MR. DAILY: Yes.

L.- That was done or in the employment of power or Niagara Falls?

L.- Some private municipalities voted.

L.- Hence that as all referred to the Niagara Government?

BIG JOHN HUGHES: No, the general policy of generating or supplying generating plants.

L.- Our main principle, or the question that was raised on, simply the fact it was at the average municipality?

MR. DAILY: Average-face, yes.

MR. [illegible]: Then date was short

L.- January, 1917.

THE CHAIRMAN: That would be at the municipal elections in January, 1917?

L.- Yes.

BIG JOHN HUGHES: The municipalities have dealt together and there matters were generally discussed with them, and they passed resolutions, but as an, but I was it was thought that before at the meeting involved that it would be well to have an appropriate of public opinion.

THE CHAIRMAN: Mr. Hughes, would you let us have a copy of that resolution that was taken on in those municipalities in January, 1917, you will have it available?

MR. HUGHES: If it is on the files, you have seen them all.

CHAIRMAN-DAILY: And keep put the matter up to the municipalities in such a way that they fully understood what they were assembled?

MR. HUGHES: Yes, I think so, either to generate or purchase energy power.

COMMISSIONER HARRIS: You didn't tell them at the time that this would involve them in an expenditure probably of $125,000,000 to $150,000,000 did you?

MR. GABY: I am speaking of the plebiscite that was submitted.

SIR ADAM BECK: Have you heard of any of them complaining?

COMMISSIONER HARRIS: Not yet.

SIR ADAM BECK: Do you expect them to? Ev. 2231

COMMISSIONER HARRIS: I wouldn't be surprised. 2232

The following is an extract from a letter dated February 20th, 1923, from the Secretary of the Commission to the Secretary of this Commission:

"In reply to your letter of February 3rd re the Ontario Power Company, in which you ask whether the By-law #7739 is an example of the by-laws submitted to all of the 74 municipalities in January, 1917, I have had a considerable number of these examined and find that question (1), referred to in appendix 'C' City of Toronto, is the identical question submitted to the other municipalities and dealt with as part of their by-law."

Question (1) is as follows:-

"Are you in favor of having the Municipality develop or acquire through the Hydro-Electric Power Commission of Ontario, whatever works may be required for the supply of electric energy or power in addition to such electric power as is already obtained under the existing contract with the Hydro-Electric Power Commission of Ontario?"

Neither the purchase agreement nor the sections introduced into the Act state specifically to whom the property purchased belonged. It is not stated whether it belonged to the Commission as a general floating asset, or

CHAIRMAN DUNLOP: The didn't tell them at the time that this would involve them in an expenditure of $125,000,000 or $150,000,000 a year.

MR. PATT: I am ignorant of the judgments that was submitted.

SIR ADAM BECK: Have you heard of any of them examined?

CHAIRMAN DUNLOP: Not yet.

SIR ADAM BECK: Do you expect them to?

CHAIRMAN DUNLOP: I wouldn't be surprised.

The following is an extract from a letter dated February 10th, 1922, from the Secretary of the Commission to the Secretary of this Commission:

"In reply to your letter of February 7th to the Ontario Power Company, in which you ask whether the 12-inch pipe is an example of the 12-inch mentioned in all of the 76 municipalities in January, 1917, I have had a conference under my three commissioners and find unanimously that the 12-inch pipe referred to in appendix 'C' dip of Report, is the identical question submitted to the other municipalities and again with no part of their 12-inch."

Question (2) is as follows:-

"Are you in favor of having the Municipality develop or acquire through the Hydro-Electric Power Commission of Ontario, whatever water may be required for the supply of electric energy or power in addition to such electric power as is already obtained under the existing contract with the Niagara-Ontario Power Commission of Toronto?"

Neither the previous agreement nor the contract introduced into the 1st stage hearings is when the property purchased existed. It is not stated whether it existed in the Commission's general floating assets, or

whether it belonged specifically to the municipalities to whom power was supplied by the company. The Niagara System belongs to the municipalities, but as to the Ontario Power Company nothing was said about it.

The Ontario Power Company must be operated as a company separate and distinct from the Niagara System on account of the bonds outstanding in the hands of the public. In spite of this, for the two fiscal years ending October 31st, 1921, and October 31st, 1922, Messrs. Clarkson, Gordon & Dilworth have treated the company as works of the Commission, and have provided for sinking funds on the purchase price in anticipation of the Act being amended so as to deal with the company on a Commission basis. Mr. Clarkson takes the view, "that the Commission must have purchased it (the company) in trust for somebody, and that it would naturally follow that that was the Niagara System, and, therefore, the Niagara System would probably be the owner eventually of that undertaking when it is paid for. If a deficit was made in the operation of the company nobody was liable unless there was a distinct chain, indicating for a certainty that the Niagara System was the owner of that through the Commission." Ev. 2098

Further in expectation of this change in the Act, the auditors have for the past two years distributed the cost of the operation of the company throughout the Niagara System, with a consequent increase in rates to the municipalities on that system.

whether it belongs specifically to the municipalities or whether power was conferred by the Province. The Niagara System points to the municipalities, but as the Ontario Power Company building was said about it.

The Ontario Power Company must be operated as a private enterprise and division from the Niagara System is against at the broad understanding in the hands of the public in view of this, for the first years ending October 31st, 1921, and December 31st, 1922, respectively have brought the company as voted at the Dominion, and have provided for making funds on the purchase price in anticipation of the act being ratified by the Parliament. Mr. Ferguson dealt with the company on a transmission basis. Mr. Ferguson taken the view, "that the municipalities must have guaranteed it (the company) in order for municipalities, and that it would naturally follow that that was the Niagara System, and, therefore, the Niagara System would probably be the proper municipality of that undertaking when it is paid for. If a district was made in the operation of the company which was liable unless there was a district owner, indicating for a certainty that the Niagara System has the power of that through the Commission."

Further in anticipation of this event in the act, the municipal have for the past two years distributed the work of the operation of the company throughout the Niagara System, with a commission interest in water to the municipalities on that system.

While the Ontario Niagara Development Act of 1917 has special reference to the construction and operation of the Queenston-Chippawa Development, it would appear that certain sections in this Act have a general bearing upon all works and undertakings by the Commission, and that sections contained therein definitely set out the relationship of the municipalities to all power developments in the vicinity of the Niagara River, which interpretation would of course include the Ontario Power Company.

Section 5 of the Ontario Niagara Development Act, 1917, reads as follows:

(1) "Notwithstanding anything contained in any contract heretofore entered into between the Commission and any municipal corporation or corporations or in any general or special Act fixing the maximum price of power to municipal corporations at Niagara Falls, every municipal corporation which has heretofore entered into or which may hereafter enter into a contract for the supply of electrical or pneumatic power or energy by the Commission from the Niagara River, shallpay to the Commission a sum equal to the average cost per horse-power to the Commission of all the power supplied to the municipal corporations under contract with the Commission for the supply of power from Niagara Falls and the vicinity.

(2) "In fixing the amount per horse-power so payable by a municipal corporation, the Commission shall take into account the amount payable per horse-power by the Commission to any company or individual operating works for the development of power from Niagara Falls and the vicinity, and the amount required for payment of interest on the sums expended by the Commission upon the construction and equipment of the works, and to form a sinking fund sufficient to provide for the repayment of such amounts and to provide renewals and such other charges as the Commission may deem necessary and proper.

Table 100 Tabela Niagara Development Inc. If that has special reference to the construction and operation of the Jamestown-Niagara Development, it would appear that certain conflicts in this are a general bearing upon all parts are determined by the Commission, and that analysis established therein certainly are not the relationship of the constituents to all power developments in the vicinity of the Niagara River, which corporations would of course include the Ontario Power Company.

Section 2 of the Tabela Niagara Development Inc, 1927, reads as follows:

(1) "Notwithstanding anything herein contained to the contrary the Commission may, upon the application of any municipality or in any proceeding to adjudicate and fixing the maximum price of power to municipal corporations of Niagara-Falls, every municipal corporation which has heretofore entered into or which may hereafter enter into a contract for the supply of electrical or hydraulic power or energy by the Commission from the Niagara River, shall be the Commission's own agent in the aforesaid and the power supplied to the municipality corporations under contracts with the Commission for the supply of power from Niagara Falls and the vicinity.

(2) "In fixing the amount for power-power so generated by a municipal corporation, the Commission shall take into account the market price of power-power by the Commission to any municipal or individual purchasing power for the municipality of power from Niagara Falls and the vicinity, and the costs required for payment of interest on the sums expended by the Commission plus upon the construction and equipment of the works, and to form a sinking fund sufficient to provide for the repayment of such amounts and to provide reserves and such other charges as the Commission may deem necessary and proper.

(3) "The cost to municipal corporations of the power supplied to them by the Commission from any source at Niagara Falls, or in the vicinity of the Niagara River shall be annually adjusted and apportioned by the Commission as provided by the Power Commission Act.

(4) "The column No.3 in Schedule 'B' of the agreement dated the 4th day of May, 1908, and set out in Schedule 'A' of the Power Commission Amendment Act, 1909, is struck out and the following substituted therefor:

'Maximum Price of Power at Niagara Falls'

"'The average cost per horse-power to the Commission of power developed by the Commission or procured under contract with any corporation or individual developing power at Niagara Falls, to be annually adjusted and apportioned by the Commission as set out in Section 8 of The Ontario Niagara Development Act, 1917.'"

(5) "Except as qualified or amended by this Act, all the terms of the said agreement of the 4th day of May, 1908, shall continue in force and apply as far as practicable in the same manner and to the same extent as if this Act had not been passed. 7 Geo.V,c.21,s.5."

Thus it will be observed that by sub-sections 1, 2 and 3 of Section 5, that notwithstanding anything contained in any contract before entered into by the Commission and any municipal corporation, that the municipalities are required to purchase power at cost for any power supplied to them from Niagara Falls and the vicinity. Sub-section 4 refers to and cancels column No.3 in Schedule "B" of the original agreement made with the municipalities, which provision read as follows:

(3) "The date in municipal corporations of the power supplied to them by the Commission from the station at Niagara Falls, or in the vicinity of the Niagara River shall be annually adjusted and apportioned by the Commission as provided by the Power Commission Act.

(4) "The column No.3 in Schedule 'B' of the aforesaid dated the 4th day of May, 1928, and set out in Schedule 'A' of the Power Commission Amendment Act, 1929, is struck out and the following substituted therefor:

'Maximum Price of Power at Niagara Falls'

"The average cost per kilowatt-hour to the Commission of power hereunder to the municipalities or private owners entitled with any corporation or individual developing power at Niagara Falls, to be annually adjusted and apportioned by the Commission as set out in Section 3 of the Niagara Development Act, 1921."

(5) "Except as varied or amended by this Act, all the terms of the said agreement or the 4th day of May, 1928, shall continue in force and apply so far as practicable to the said water and to the said agreement as if this Act had not been passed. 7 Geo.V.c.22,s.2."

Then it will be observed that by Act-section 1, and 2 of Section 2, that notwithstanding anything contained in any contract before entered into by the Commission and any municipal corporation, that the municipalities are relieved to purchase power as want for any power supplied to them from Niagara Falls and Sir Adam Beck-section 2 refers to the schedule mentioned in schedule "B" of the original agreement made with the municipalities, which provides that as follows:

"$9.40 for power at 12,000 volts until 25,000 h.p. or more are taken, then $9.00 for all, $10.40 for power at 60,000 volts until 25,000 h.p. or more are taken, then $10.00 for all. If power taken at higher voltage, price to be fixed by arbitration."

The reference at the end of sub-section 4 of Section 5 which is "Section 8 of the Ontario Niagara Development Act, 1917" is apparently incorrect and should be 8 Geo.V, C.14, S.14.

If there is any doubt as to the connection between the Niagara System and the Ontario Power Company it is very apparent that the Power Commission Act should be revised and amendments made thereto which will declare that the capital share stock of the Ontario Power Company shall be considered as "Works of the Commission" to be governed in entire accordance with the provisions of the Power Commission Act, and that the Ontario Power Company shall be considered as a definite part of the Niagara System.

Relations between Commission and Company prior to Purchase.

As stated on page 3 of this report, a contract was made between the Commission and the Ontario Power Company on March 19th, 1908. This contract covered the supply of power on a maximum amount of 100,000 horsepower to be taken in certain blocks as required. The rate for power delivered at 12,000 volts was $9.40 per horsepower per annum up to 25,000 horsepower, and $9.00 per horsepower per annum for all the power when the amount

reserved and held ready for delivery upon the order of the Commission totalled 25,000 horsepower or more. The contract was to expire in 1950.

Reasons given by the Commission for the Purchase

Mr. F. A. Gaby, Chief Engineer of the Commission, at the hearing on December 20th, 1922, gave certain reasons for the purchase of the Company. These reasons were fully discussed and appear to be:

1. The necessity for additional power in the Niagara District, it being thought that more continuous operation would result if the Commission controlled the company.

2. The acquisition of certain rights claimed to be held by the company covering the diversion of water on the Welland River. It was thought that these rights might interfere with the Queenston-Chippawa project. Ev. 2112

With reference to the second reason, according to Mr. Gaby the company had "the right to take the Niagara waters up the Welland, and they bought the necessary right-of-way for the purpose of constructing a canal to get a greater head and divert the water from the Welland River." ....."They had the right to use it at the Falls or probably any other location."...."The right-of-way is now owned by the Hydro-Electric Power Commission; they (the Ontario Power Company) bought six or seven hundred acres."...."We believe the scheme we have is much better than the proposition they had." Ev. 2118.

reserve and hold ready for delivery upon the order of the Commission initial 24,000 horsepower or more. The contract was to expire in 1920.

Reasons given by the Commission for the Decision

Mr. F. A. Daly, Water Engineer of the Commission, at the hearing on January 26th, 1920, gave certain reasons for the granting of the company. These reasons were briefly discussed and appear as follows:

1. The necessity for additional power in the Niagara District, it being thought that more hydraulic generating units would be the Commission consider the company.

2. The application of certain rights already in use by the company diverting the diversion of water on the Welland River, it was always that these rights could interfere with the Commission-Ontario project.

With reference to the second reason, addressing to Mr. Daly the company had "the right to take the Niagara water as the Falls, and that based the necessary right-of-way for the purpose of constructing a canal to get a greater head and divert the water from the Welland River." ....."They had the right to use it at the Falls or providing any other location."...."The right-of-way is now owned by the Hydro-Electric Power Commission; they have Ontario Power Company) rights also or area reserved water."...."We believe the reason we have is much better than the proposition they had."

The Chairman of the Commission in his evidence, when asked why the Commission purchased the company, replied:

> "Oh, because it was thought desirable that we should get control of it. They claimed certain rights on the Chippawa, which we did not admit. They were paying rentals, and the Chippawa development was somewhat dependent on having control of the company..... Ev. 2205
>
> "I mean the quantity of water that they were supposed to have the right to use was not specifically fixed in horse-power quantities as it was in the case of the Electrical Development and the Canadian Niagara. There the amount of power they could develop was specifically fixed at 100,000 and 120,000 respectively, but with this company apparently there was no quantity of power, or quantity of water specifically fixed in the agreement that they might use, merely the capacity of three pipes, and if they had been used to full capacity inefficiently there would have been very little water for any other development, probably none." Ev. 2206-7

The following extract is from the evidence of the Chairman of the Commission:

Q. How does the cost of power to you, when you were buying it from the Ontario Power Company, compare with the cost to you now that you own it, per horse-power?

A. Well, of course, the operating costs have enormously increased since we bought it. I don't know what it is now. I know we are meeting all our obligations out of plant. The cost of operation has gone up considerably, and our capital investment has been increased by three and a half million dollars temporarily, and it was never intended to operate it until (sic) we could use the water on the Chippawa.

Q. What were you going to do with it then?

A. With what?

Q. With the Ontario Power Company?

A. Well, we would use it in other places.

The Chairman of the Commission in his evidence,

when asked why the Commission purchased the company, replied:

"Oh, because it was thought desirable that we should get control of it. They minions certain rights on the Chippewa, which we did not obtain. They were paying royalty to the Chippewa Lateigment was somewhat hampered in having control of the company....

"I have the quantity of water that they were supposed to have the rights to was not practically fixed in Government possession as it was in the case of the Niagara Development and the Canadian Niagara. There the amount of power they could develop was specifically fixed at 120,000 and 120,000 respectively, but with this company apparently there was no quantity of power, or quantity of water specifically fixed in the agreement that they might use. It merely has reference to three rights, and if they had been [illegible] adequate inefficiently there might have been very little water for any other development, probably none."

The following extract is from the evidence of the

Chairman of the Commission:

1. How does the cost of power to you, when you were buying it from the Ontario Power Company, compare with the cost to you now that you own it, per horse-power?

A. Well, of course, the operating crews have economically increased since we bought it. I don't know what it is now. I guess it are getting all our obligations out of place. The cost of operation has gone up considerably, and our capital investment has been increased by three and a half million dollars largely, and it was never intended to operate it until [sic] we could use the water on the Chippewa.

2. Have were you going to do with it then?

A. With what?

2. With the Ontario Power Company?

A. Well, we would use it in other places.

Q. Use the water in other places?

A. The material, generators and wheels. I think the generators were to be used to synchronize the load, and the wheels were to be used in other developments.

Q. Were you practically then to close down at the present site of the Ontario Power Company?

A. Not that I know of. These two units that we put in were put in on account of the war. They were to be discontinued.

Q. But what you say now, did that apply to the others?

A. I suppose, ultimately, some day they will do what they are doing on the other side, do away with them entirely.

Q. Haven't you any specific time in mind when you say that?

A. It depends on the demand for power. When it is economically proper to do so it will be done.

Q. What will be done?

A. The water will be used at a higher head.

Q. That would be the Chippawa; have you got that in mind?

A. Not the Chippawa. No way of getting a full head between Lakes Erie and Ontario, the full head.

Q. That is the only place, Sir Adam, where you are getting it now?

A. That is the only place where we are getting it now.

Q. Well, what other places would you have in view?

A. No one suggested that for the present development that we require to close them down.

Q. No agreement has been arrived at?

A. No, but a recommendation has been made. The War Department resident engineers have recommended a 44,000 second feet for the further diversion at Niagara.

Q. Who has money in Grove Island?

A. The certain government and wealth. I think the contractors were to be used to approximate the land, and the wealth were to be used in other arrangements.

Q. Does you practically that in-place Dam-up the present site of the industry, there daughter

A. Not that I know of. Taken are really that we just in were put in on account of the war. They were to be discontinued.

Q. But what you say now, did that apply to the [illegible]?

A. I suppose, ultimately, some day they will do what they are doing on the other side, co-ordinate with this activity.

Q. Have you any specific plan in mind when you say that?

A. To operate on the source for power. When it is economically feasible to do so it will be done.

Q. That will be fine?

A. The water will be used as a minor head.

Q. This would be the Ontario Hydro you say that is water?

A. Yes the Ontario. To say if getting a full head private labor data and [illegible] the full head.

Q. That is the only place, Sir Jack, where you are getting it now?

A. That is the only place where we are getting it now.

Q. Well, that other place will the head is what

Q. Do the suggested sites for the present development that we refer to again then.

Q. Of operations has been arrived at?

A. Yes, but a recommendation has been made. The War Department Welland engineers have recommended a $4,000 access for the Tartar Airways on Niagara.

Q. But having regard to the present Treaty rights, nothing further, you might require to close down the Ontario Power Works, I will say in part, with the full development of the Chippawa?

A. It depends on how many generators you install.

Q. Will you have to close down any of the present generators operating?

A. No, not now, not with what we have got.

Q. Supposing you have nine generators installed at Queenston, will you be able to provide water under the present treaty for all those generators, and for the Ontario Power plant and other plants as well?

A. We cannot tell that until we have definite information and data of the actual capacity of the canal and the efficiency of it, which no one can estimate, I believe accurately, until we have tests made.

Q. I presume you have made some estimates?

A. We haven't any report that I know of any more than we had before.

Q. Would it be correct to say that you believe that under the present treaty rights, that is, 36,000 second feet, you could operate to the full capacity of the Queenston-Chippawa canal?

A. Now, Mr. Chairman, you are asking me for data and figures here that I am not carrying about in my head.....

Q. Well, then, you cannot say whether there is sufficient water under the present treaty to supply those three places?

A. How can I tell. I have my own ideas, but I don't know that they would be of value to you. You want something that is as nearly accurate and reliable as is possible.

Q. Let us have your ideas?

A. I haven't got any ideas other than I require for my own judgment in dealing with these matters. When I get the proper information I deal with it,

Q. Our motion refers to the present Treaty rights, including fishing, you might regard it right from the Ontario Power Co., I will say it part, with the full membership of the Highway.

A. It depends on the more quantitative you install.

Q. Will you have to place down any of the present structures speaking?

A. No, not now, and with what we have got.

Q. Supposing you have some generators installed at Cascades, will you be able to practice water make the present supply for all those generators, and for the Toronto Power plant and other plants as well?

A. We cannot tell that until we have definite information and data of the natural capacity of the canal and the efficiency of it, which we are now getting. Without exactly, until we have been at it.

Q. I presume you have made some estimate?

A. We haven't any expert that I know of any more than we had before.

Q. Would it be correct to say that you believe that under the present Treaty rights, that is, 10,000 cubic feet, you would operate to the full capacity at the Queenston-Chippewa canal?

A. Yes, Mr. Chairman, you are asking me for data and figures that I am not arguing about in my head.....

Q. Well, then, you cannot say whether there is sufficient water under the present treaty to supply those plants?

A. Yes can I tell. I have my own ideas, but I don't know that they would be as valid as you. The most important that is an early survey and verification as is possible.

Q. Let us have your ideas?

A. I haven't got any ideas other than I require for my own judgment in dealing with some matters. Then I get the proper information I deal with it.

with my colleagues, in the proper way. You are asking me matters here in a haphazard way, in a way that is perfectly ridiculous.

COMMISSIONER J. A. ROSS: You have developed the canal, Sir Adam, on the basis of your general ideas. They must be of some value?

A. We did.

THE CHAIRMAN: Why not give them to us?

COMMISSIONER J. A. ROSS: You don't mean to say you did not build that canal without knowing you would have enough water for it. I think your general ideas would be very valuable to us?

A. I am not going to give you all the ideas that I have got. I know we bought the Ontario Power Company for very very vital reasons. It was considered by the Government a very admirable purchase. I know I am not complimented on all things I do, but I was complimented by the Government, verbally, and by my co-Commissioners for having been able to purchase a large property on such reasonable terms, on easy terms of payment, and get control of that development.

The following are statements made by the Chairman of the Commission before the Committee on Water Power of the House of Representatives, in Washington, on April 15th, 1918:

"When we bought the Ontario Power Company one of the objects in buying it was that we could scrap the plant in ten, fifteen or twenty years, when water becomes still more valuable because of its scarcity, or because of curtailment in the use of it, and use the water more efficiently in connection with the new scheme that we have in hand." F.48a p.49

"We can take the ten or twelve thousand cubic feet per second of water now being used comparatively inefficiently in the Ontario Power Company plant, and use it in connection with our Queenston-Chippawa scheme, thus securing the advantage of the full head available between the two lakes." F.48a p.15

with my mainspring, in the proper way. The
are merely an minute lark in a magnificent way,
in a way that is perfectly ridiculous.

COMMISSIONER J. A. HOSS. You have developed the
sound, Sir Adam, on the basis of your general
ideas. They must be of some value?

A. We did.

THE CHAIRMAN. Why not give them to us?

COMMISSIONER J. A. HOSS. You don't mean to say
you will use this sound principle because
you would have enough value for it. I think
your general idea would be very valuable to us?

A. I am not going to give you all the ideas that
I have got. I have so bought the Canadian Power
Company for very, very vital reasons. It was
established by the Government a very substantial
undertaking. I have a lot associated on all
things. I am not specialized by the
Government, verbally, and by my co-Commissioners
for having been able to produce a large property
on such reasonable terms, on any terms of pay-
ment, and get control at that development.

The following are statements made by the Chairman
of the Commission before the Committee on Water Power of
the House of Representatives, in Washington, on April 23rd,
1918:

"When we bought the Niagara Power Company
one of the objects in trying it was that we
could carry the plant in the winter or
heavy years, when water between will more
valuable energy or the energy, or because
of variations in the use of it, and we the
water more attractive in connection with the
new scheme that we have in hand."

"We can take the use or Niagara Diversion
cubic feet per second of water now being
used comparatively inefficiently in the Canadian
Power Company plant, and use it in connection
with our Niagara-Welland Canal, thus
saving the storage of the full head vertical-
ally between the two lakes."

Reasons given by the Commission for Building the Third Pipe Line

The following is an extract from the evidence of the Chairman of the Commission in connection with the above:

COMMISSIONER HARRIS: ...It was the Hydro idea that that third pipe line should be constructed, and it was to be constructed for the purpose of increasing the production of power from the Ontario Power Company.

SIR ADAM BECK: Until the Chippawa was finished, to provide power at the time to the manufacturers, and during the war, and on the demand of the Power Controller--

Q. That that should be built?

A. No, that power should be produced.

Q. The Power Controller never made any demand that that should be built?

A. He did, personally. In conversation he said, 'All right, you put that in and we will see you through on it,' practically words to that effect, at least we understood it that way,- but in the meantime we have got to have more power, here is what I have got to have. That is what he said, and we were curtailing municipalities, turning off their street lighting, curtailing manufacturers, and the only thing to do was to rush this job through..... Ev. 2214-5

At any rate, the Government and everyone else was convinced that it was our duty, and the proper thing to do, and we did it, that is all. It served us a good purpose in the end, and if the war had gone on it would have been doubly valuable..... Ev. 2215

We know this much, the wood stave pipe line does give us a very large increase in capacity out of the generators in the main operation of the Ontario Power Company's building.

Q. Would you have constructed the third pipe line for that purpose without reference to the putting in of any further generators? Ev. 2217

A. No, not that I know of.

Lawsons given by the Commission
for building the Tight Pipe line

The following is an letter from the evidence of the Chairman of the Commission with the above:

MR. ALDERMAN ELLIOTT: ...It was the opinion that that tight pipe line should be constructed, and it was to be constructed for the purpose of increasing the probability of power from the Niagara Power Company.

MR. AZIZ KHAN: Until the Minister was finished, he provide power at the time by the municipality and during the war, and on the demand of the Power Controller—

1. That that should be built

2. So, that power should be produced.

3. The Power Controller never made any demand that that should be built

4. He did, personally. In conversation he said, 'All right, you put that in and we will see you through on it,' practically words to that effect, at least we understood it that way,— but in the meantime we have got to have more power. Here is what I have got to have. That is what he said, and we were anticipating municipalities, turning off their street lighting, and giving manufacturers, and the only thing we is we is run this tight through.....

At any rate, the Commission and anything else was convinced that if we did not do it, and the province being to do, and be did it, that it is at it, it rather to a point therefore is the end, and if the war had gone on it would have been doubly valuable.....

So from this aspect, the more steam pipe line was more as a very large increase in capacity and of the generators in the main operation at the Niagara Power Company's building.

5. Would you have constructed the Tight Pipe line if not that purpose without reference to the period of any Power Commission?

A. Oh, not that I know of.

Reasons given by the Commission for increase in Cost of Constructing Third Pipe Line over Estimated Cost

As shown on page 19of this report (Gen.Rel.) the total advances by the Commission at October 31st, 1922, for purposes of the third pipe line amounted to $3,515,094.93 while the estimated cost was $1,806,000.00, as shown by a Minute of the Commission dated December 20th, 1917.

Mr. Walter J. Francis in his report entitled "Description of Plant" shows certain comparisons between estimated and actual costs. A number of items selected from his report are given in the following table:

Items	Percentage of actual unit cost over estimated unit cost
Wood Stave Pipe	34%
Excavation for Pipe Line	193%
Steel for Distribution	102%
Penstock Concrete	103%
Power House Substructure	73%
Power House Superstructure	67%

The unit cost of Penstock Excavation was 172% less than the estimated unit cost, andamong the items listed as "items not estimated" is one in the amount of $240,039.74 for "Administration and Interest less Unclaimed Wages".

Our Consulting Engineer in his "Analysis of Cost" of the installation of the third pipe line, states as follows:

> "I have studied the circumstances which led up to the construction of the addition, ultimately known as conduit No.3 and units 15 and 16, and I have gone over the matter carefully with the engineerw of the Hydro-Electric Power Commission, who have furnished me with the figures given in the tables.

Business given by the Commission
for insurance is done at Constructing
Joint Line Grain Exchange Room.

As shown on page 1947 this report (Exhibit 1) the total allowed by the Commission at January 31st, 1947, for payment of the Joint Line Elevator is $2,341,000.00 while the estimated cost was $1,500,000.00, as given by a Board of the Commission dated December 12th, 1947.

Mr. Wilson J. Parkin in his report entitled "Investigation of Grain" gives certain comparative figures relative and actual costs. A number of items selected from his report are given in the following tables:

Item	Percentage of actual cost that was estimated
Head Office Plus	84%
Insurance for Type Plus	1443
Road for Elevation	1000
Railroad Laterals	1442
Power House Transformer	700
Power House Compressors	475

The work was on Transfer Elevator was 1347 less than the estimated cost, assuming the item listed as "Plus and estimated" is not in the amount of $242,000.00 for "Administration and Interest Less Unclaimed Wages".

Mr. Dunbling Engineer in his "Analysis of Cost" of the installation of the Pilot Plus Line, states as follows:

"I have studied the circumstances which led up to the construction of the elevator, although I have found as regards Mr.'s and notes in his, and I have gone over the matter carefully with the engineers of the Pyro-Electric Power Commission, who have furnished me with the figures given in the table.

"The addition as originally conceived involved only the use of the residual capacity of the fourteen installed units of the plant, said to be approximately 25,000 horse-power, susceptible of reclamation by reducing the hydraulic head losses in conduit No.1 and conduit No.2. Comprehensively, therefore, this project comprised the installation of a third wood-stave pipe line of comparatively small diameter leading from the available connection at the gate-house, and following along the surface contours as far as practicable down to a connection with No.2 surge tank. This plan would have relieved the abnormal draft on conduit No.1 and conduit No.2, thereby increasing the head on the turbines.

"While the above project was under investigation, it is stated that the load requirements for munition work became so urgent that the Hydro-Electric Power Commission suddenly decided to purchase two second-hand turbines from the Aluminum Company of America and also to buy two new generators for connection thereto. This decision resulted in the deletion of the factors which entered into the original intention of the addition, and the whole problem became one of quickly installing a water connection between the headworks and the new turbines with sufficient independent capacity therefor. This involved the building of a wood-stave conduit, and it was decided to adopt a pipe of the same diameter as the largest hitherto built, namely, 15'6". The engineers of the Hydro-Electric Power Commission say that they did not feel justified in advancing beyond the precedent of installing a pipe larger than 15'6" in diameter, because of the serious damage to Park property which would inevitably result, on account of the large quantity of water involved, if a failure were to occur.

"The use of pipe of this size eliminated the possibility of generally using the surface contours, as had been intended for the smaller one, and consequently a large yardage of excavation was involved. The engineers say, moreover, that there was no time for the making of surveys and borings or for the preparation of detailed plans, and all studies and estimates had to be made on the basis of such data as were available in the original files of the Ontario Power Company. The essential plans for construction and installation purposes had to be issued while the construction work was actually under way.

"The decision as originally assessed involved only the use of the Tennessee capacity of the Jefferson Island mine of the plant, said to be approximately 24,000 horse-power, assumption of installations by retaining the Riverside Dam Power is subject to.I and which T.E. Corporation, Electricity, this project comprised the installation of a light water-store plus site of Electricity small element leading from the existing assessing of the dam-house, and building also the entire cost as for an prestigious area is a connection with T.E. water main. This plan would have relieved the external crisis on stations Nos.1 and stations T.E., thereby increasing the work on the barrage.

"Since the above project was under investigation, it is stated that the land requirements for building were found as soon, and that Riverside Land Commission certainly decided to prepare for energy-land varying from the minimum capacity of Ranges and also to buy the new power station. This decision resulted in the minutes of the Ontario Hydro Commission being the original initiators of the original installations of the electrical increases of the activities, and the whole problem began as an entirely installing a water supplies between the Commission and the new Province with outlines independent operating charges. This involved the building of a wood-stave conduit, and it was decided to adopt a pipe of the same diameter as the largest bitumen pipe, namely, 12'6". The engineers of the Ontario-Toronto Power Commission say that they did not feel justified in expending beyond the precedent of installing a pipe larger than 12'6" in diameter. Details of the earlier issues to just property which would inevitably result, in spite of the large quantity of water involved, if a failure were to occur.

"The use of pipe of this size eliminates the possibility of generally using the Jefferson Island, as has been intended for the original use, and consequently a large portion of the existing mine lateral. The engineers say, however, that there was no risk for the making of storage and backing up for the generating of extra power, and all effects and estimates had to be made on the basis of such data as were available in the original plan of the minute power undertaking. The material plans for installations and installations purposes has by is issued with the experiments with the experimental work was actually under way.

"The size and location of the new wood-stave pipe line, known as No.3, caused the Queen Victoria Niagara Falls Park Commissioners to require the backfilling of about three thousand lineal feet of the line. The magnitude of the pipe and its resultant inability to retain its circular form under heavy outside pressure made it necessary to place a concrete envelope around the section to be backfilled before the backfilling was placed.

"Under these circumstances it was not possible to determine the relative proportions of earth and rock excavation or the location of such obstructions as duct lines, water pipes and so forth, or for any of the detailed information concerned in the works for the surge tank and the addition to the power house building. The uncertainty in the matter of rock quantities also of necessity resulted in a similar uncertainty in concrete yardage.

"To save time, the approximate weights and dimensions for the steel plate work were figured from the old plans of the Ontario Power Company and tenders were called for on the basis of a flat rate per pound for material to be subsequently estimated and ordered."

At the hearing on April 5th, 1923, Mr. Gaby, Mr. Meres and Mr. Trimble of the Commission gave evidence at great length covering the increase in the cost of this work over the estimate. The evidence shows that the increase in cost in their opinion was due principally to the following circumstances:

(1) Change in and additions to the design after the original estimate was made;

(2) Plans of certain parts of the work were not completed for months after the work was started;

(3) The difficulty in getting material, such as steel;

(4) Increase in cost of materials;

(5) Increase in labor costs;

The rule was based on the new Wood-Gaye pipe line, which is 24.5, against the Queen Victoria Imperial Dial Port Commissioner to require the installing of some strong Wooden Lines and of the line. The magnitude of the pipe and its possibly impossibility to obtain its alternate from under large pipeline pressures made it necessary to place a pressure regulator around the nozzles to be installed before the installation of the plant.

"Under large pressures in the pipe particle by increasing the relative proportions of sand and rust accumulating on the inside of such installations as dust lines, water pipes and so forth, as far as at the actual installation occurred in the water for air which had the pipeline in the Great Queen building. The accumulation in the bottom of such installations also of economic importance in a similar connection in another pipeline.

"In more plant, the approximate volume and thickness of the steel plate more slightly for the air-cleaner of the Victoria Queen Building and heaters were called for on the basis of a dust rate and power for material in the atmospheric attempted and stored."

At the hearing in April 5th, 1947, Dr. Saw, Dr. Green and Dr. Tinkle of the Commission gave evidence as great weight covering the importance in the read of dust were over the examiner. The witnesses stated that the cause in dust in their opinion was due primarily to the following circumstances:

(1) Change in the moisture in the intake after the original equipment was built;

(2) Clean of-masses parts of the area were not modified the moisture after the area and weather;

(3) The difficulty in getting materials, such as steel;

(4) Increase in dust of materials;

(5) Increase in lower terms;

(6) Decrease in the efficiency of labor;

(7) Shortage of labor;

(8) Labor troubles;

(9) Flu epidemic;

(10) The objection of the men to work when the spray from the Falls was blowing in their direction;

(11) The necessity for paying extra to the men while working under conditions outlined above;

(12) Unforeseen cost of casing and backfilling the pipe line;

(13) The moral effect upon themen of the presence of militia and police.

To sum up the evidence it appears that the original plans were so changed that the actual cost was bound to exceed the estimated cost; that the work was carried out in advance of the plans, that labor and material costs rose during the progress of the work and that almost every other conceivable misfortune contributed to the increase in the cost.

(6) Darkness in the airstrip at night;

(7) Darkness at night;

(8) Lack lighting;

(9) Its equipment;

(10) The objective of the war can be even clear the among case, the Italia war itself is high-handed;

(11) The mentality for getting rid of the war with marking under administration regiment after;

(12) Darkness and of people and mobilizing the pick field;

(13) The only effect upon change of the government of British and point.

To sum up the reasons is apparent that the airfield plan were so hasty that the actual work was rushed to speed the preparing ready that the work not having not to absence of the place, that labor and material were even during the progress of the work and that almost every other reasonable deficiency contributed to the failures in the case.

S U M M A R Y

In the foregoing sections of this report comment has been introduced from time to time to make the various statements clear. In addition to statements of fact obtained from the Auditors' and Consulting Engineer's reports a considerable amount of evidence has been quoted in connection with the statements made by the witnesses, who gave evidence in connection with this company, and it is believed that the evidence quoted fairly represents the statements so made. In order to direct attention to the matters on which the Commission may desire to give decision, hereunder is given a brief summary of the points which appear to require special consideration.

Origin of Com any - ("Historical" - p.1.)

The original company was incorporated by special act of the Dominion of Canada on June 23rd, 1887, with authorized capital of $250,000.00. The authorized capital stock was increased at different times to a par value of $15,000,000.00, only $10,000,000.00 of which was outstanding at date of acquisition by the Commission.

Right to Divert Water - ("Historical" - p.1.)

Various agreements were made with the Queen Victoria Niagara Falls Park Commission which were approved by Orders-in-Council, dated April 23rd, 1902, and August 7th, 1902. The

E X H I B I T

In the financial negotiations of this report, consideration has been introduced from time to time on the varying exchange rates. In satisfying to criticisms of that material from the Indians, and Canadian Government representatives in connection with the Indian Canadian Commission, the rates of exchange in question were by the "Ottawa", and it is believed that the evidence quoted fully represents the circumstances at hand. In order to direct attention to the material, which the Commission may desire to give decision, hereunder is given a brief summary of the points which appear to require special consideration.

<u>Claim of Canada</u> - ("Minutes", - p.4)

The original Treaty was interpreted in meeting and of the Decision of March 20 June 1927, with subscribed capital of $200,000,00. The authorized capital was increased at different times by a par value of $10,000,000, only $10,000,000.00 of which was outstanding at date of acquisition by the Commission.

<u>Flow to Ferry Point</u> - ("Minutes" - p.4)

Various agreements were made with the Lower Vienna Niagara Falls Power Commission which were approved by Orders-in-Council, dated April 1924, 1929, and August 7th, 1940. The

amount of water allowed the company is not clearly specified, but is stated to be that required to generate 180,000 horse-power.

The rights under the agreement made it possible for the franchise to extend from April 1st, 1900, to April 1st, 2010.

Companies affiliated with
The Ontario Power Company - ("Historical Sketch" - p.2)

1. The Ontario Transmission Company, Limited.
2. The Ontario Distributing Company.
3. The Falls Power Company.
4. The Niagara, Lockport & Ontario Power Company.

Commission enter into
Contract with the Company - ("Historical" - p.3)

The Commission entered into contract dated March 19th, 1908, with the company for the delivery of power at 12,000 volts at $9.40 per horse-power per annum up to 25,000 horse-power, and $9.00 per horse-power per annum for additional amounts up to a total maximum of 100,000 horse-power. The agreement stipulated that $1.00 per horse-power additional charge would be made for power delivered at 60,000 volts. Contract remained in force until acquisition of the company by the Commission on August 1st, 1917.

Extent of Works - ("Physical" - p.7.)

The power plant is located on the Canadian side of the Niagara River in the immediate vicinity of the Horseshoe Falls and is served by headworks about a mile above the Falls from which water is conveyed to the power house by three conduits, approximately 6,500 feet in length with a total drop of

source of water diverted the company is not already supplied, but is stated to be just acquired 14,000 horsepower.

The rights under the agreement come up for review for the provinces to return from 1960. In April 1961, in July 1969.

Competing applications with

The Ontario Power Company - ("Hydroelectric Power" - p.2)

1. The Ontario Transmission Company, (Hydro)
2. The Ontario Electrical Commission
3. The Public Power Commission
4. The Niagara, Lockport & Ontario Power Company (Canada)

Commission entry into

Transport with Ontario - "Hydroelectric" - p.4)

The Commission adopted into province being from 1958, 1976, with the company for the delivery of power as 19,000 watts at $3.60 per horse-power per annum up to 20,000 horsepower, and $4.00 per horse-power for the remainder, or by a total maximum of 140,000 horse-power. The maximum stipulated rate $1.50 per horse-power continuous water rate is made for power delivered at 60,000 volts. Negotiations involved in future until authorization of the company by the commission on January 1st, 1957.

Issue of Power - ("Hydroelectric" - p.5)

The power plant is located on the Canadian side of the Niagara River in the immediate vicinity of the Queenston Falls and is served by tailraces about 2 mile below the Falls from which water is conveyed to the power house by three tunnels, approximately 2,000 feet in length with a total drop of

28 feet.

The original power house consisted of 14 units with a total rated capacity of 119,000 kilowatts. The additional units Nos. 15 and 16, installed by the Commission in connection with the third pipe line, gave an additional capacity of 24,000 kilowatts. The combined ordinary rating is 143,000 kilowatts, or about 191,000 horse-power at 80% power factor. Under the conditions obtaining since the accident which occurred on April 20th, 1922, the rated capacity has been reduced by about 32,000 horse-power.

Extent of Accident - ("Physical" - p.10)

On April 20th, 1922, generators Nos. 15 and 16 were destroyed and their capacity was lost. A certain amount of water available from the third pipe line is used for other machines.

Output of Plant - ("Physical" - p.10)

The records now show that the actual output of power with fourteen generators working is about 174,000 horse-power. The plant is stated to obtain about 15 horse-power from one cubic foot of water per second. On this assumption, it is estimated that with

(a) 16 machines running, total water used would be 13,300 cubic feet per second.

(b) conduits Nos. 1 and 2, and fourteen units running total water used is 10,700 cubic feet per second.

(c) three conduits and fourteen units running total water used is 11,700 cubic feet per second.

With the gross head of about 215 feet, the overall efficiency of the plant is estimated to be 61%.

20 feet.

The original power house consists of 12 units with a total rated capacity of 148,500 kilowatts. The additional units, 13 and 14, installed by the Commission in conjunction with the Niagara River Diversion Project, have an additional capacity of 18,000 kilowatts. The combined available rating is 166,500 kilowatts, or about 141,000 horse-power at 80% power factor. Under the conditions obtaining since the diversion which averaged on April 20th, 1927, the rated capacity has been reduced to about 21,000 horse-power.

Source of Supply - ("Industrial" - p.18)

The Ontario Power Co., generates 70,000 H.P. in one of its hydro-electric plants. 3 certain amount of water available from the Niagara River is used in these hydro-electric plants.

Source of Power - ("Industrial" - p.19)

The records show that the actual output of power with Toronto generators varies in about 174,000 horse-power. The power is stated to which adds 12 horse-power from the entire mass of water per second. In this connection, it is mentioned that also:

(a) 14 machines running, total rated head would be 14,800 cubic feet per second.

(b) machine Nos. 3 and 5, and Turbines using running total water used is 10,700 cubic feet per second.

(c) Case machine and Turbines only running total water used is 11,700 cubic feet per second.

With the gross head of about 215 feet, the overall efficiency of the plant is estimated to be 82%.

Transformer and Distributing Stations - ("Physical" - p.12)

The main transformer and distributing station is located on the top of the hill about 500 feet on the crest of the cliff at the rear of the power house.

Transmission System - ("Physical" - p.12)

The transmission system owned by the company is shown by the map which forms the frontispiece of this report.

Purchase Price - ("General Economics" - p.13)

The Commission acquired all outstanding shares of the company of a total par value of $10,000,000.00, the consideration being $6,000,000.00 payable by 4%, forty-year gold debentures of the Commission, guaranteed by the Province. The assets of the company as at August 1st, 1917, amounted to $26,446,933.95 and the liabilities included a funded debt in the amount of $14,450,000.00 being outstanding mortgage bonds, debentures, etc., responsibility for which was assumed by the Commission.

Investment in Capital Assets - ("General Economics" - p.17)

The books of the company were not turned over to the Commission as agreed, but in the audit report for the fiscal year ending October 31st, 1918, it would appear that an amount of $10,304,113.07 was the value of rights, franchises, goodwill, etc., the balance being made up of investment in plant, real estate, transmission lines, distributing stations to the extent of $14,747,599.49; $971,284.55 representing discount on bonds capitalised and $1,349,170.53 expended upon construction of the third pipe line. Without access to the books, it is impossible

to say just how much of the $10,304,113.07 represented intangibles of no value. It would appear safe to assume that a value on contracts in force was included, and from the information now available, it would appear that these contracts are now being operated at a loss and any intangible value allocated to them prior to August 1st, 1917, would seem to have little or no value at the present time.

Construction of Third Pipe Line -("General Economics" - p.18)

Based upon the report of the Chief Engineer, which stated that by expenditure of $1,806,000.00, 50,000 additional horse-power could be obtained, the directors of the company approved of this work on December 20th, 1917.

The Commission obtained a loan in respect of this work in the amount of $1,250,000.00 from the Bank of Montreal, secured by the guarantee of the Province, and first mortgage bonds of the company in the amount of $1,400,000.00 were pledged to the bank as collateral security.

As at October 31st, 1922, the total advances by the Commission to the company for the purpose of the third pipe line amounted to $3,514,676.62. Thus it will be seen that the cost exceeded the estimate by approximately $1,700,000.00 which amount was taken from the general funds in the hands of the Commission, voted for specific purposes or received from other sources, and advanced to the Power Company.

Accounts Receivable - ("General Economics" - p. 19)

As at October 31st, 1922, a balance of $333,110.42 was owing the Commission representing overdue accounts outstanding against various parties. Of this amount $151,638.94 is against the Niagara, Lockport & Ontario Power Company representing the balance of certain bills standing in arrears. The remainder represents balances of certain other bills and unpaid American exchange charges which are in dispute.

The company has a claim against Mr. J. J. Albright in the amount of $295,633.20 of which amount $111,000.00 was awarded to the Commission by judgment of the Supreme Court and the balance is still under negotiation.

Discount on Bonds - ("General Economics" - p.21)

This charge to the extent of $933,695.96 will be charged against future operations during the life of the bonds and debentures.

American Exchange - ("General Economics" - p.21)

Exchange in connection with the retirement of $2,753,000.00 of Ontario Power Company, 6% Second Mortgage Debentures which fell due on July 1st, 1921, amounted to $350,157.70. The balance as at October 31st, 1922, was $333,920.77 which will be written off over a period of twenty years.

Outstanding Mortgages, Bonds, Debentures, etc. -("General Economics" - p.22)

The total outstanding mortgages, bonds, debentures, etc., against the properties at October 31st, 1922, amounted to

Aggregate Liabilities - ("Capital Commitments" - p. 32)

As at January 31st, 1970, a balance of $200,115,46 was owing the Canadian Pacific Railway Company under existing agreements. Of this amount $101,469.15 is against the Niagara, Lakeshore & Ontario Power Distributing Co. relating to certain land in Niagara. The remainder represents payments of certain other bills the Ontario Hydro accounts charges which are in dispute.

The company has a claim against Mr. J. Lightfoot in the amount of $[illegible] of which amount $111,900.00 was overpaid by the Commission to Lightfoot of the Income Tax and the balance is still owing to Lightfoot.

Interest on Bonds - ("General Secretary" - p.23)

This course is the amount of $[illegible] will be charged against income expenditure during the life of the bonds and debentures.

Amortize Expenses - ("General Accounts" - p.21)

Expenses in connection with the retirement of $[illegible] of Ontario Power Company, Ltd. Bonds which fell due on July 1st, 1971, amounting to $[illegible]. The balance as at October 31st, 1969, was $[illegible] which will be written off over a period of twenty years.

Preferential Dividends.

Bonds, Debentures, etc. - ("General Accounts" - p.22)

The total outstanding debentures, bonds, mortgages, etc., against the properties at October 31st, 1969, amounted to

$10,691,000.00. These bonds are being purchased out of sinking fund payments to the trustees and during the year ending October 31st, 1922, $157,000.00 worth were retired.

Reserve for Renewals - ("General Economics" p p.23)

The company made no provision for renewals for the years 1918 and 1919. Since that date up to October 31st, 1922, an amount of $1,767,026.04 has been allocated to this fund, which included an amount of $860,833.35 which was shown in the accounts of the company as a credit balance for renewals at the date of acquisition August 1st, 1917. There is no information available as to what actually constituted this credit, as the original books of account are not available. Our Consulting Engineer states that based upon the total assets of the company, amounting to approximately $31,000,000.00, in which is included depreciable capital of probably $6,000,000.00 or $7,000,000.00, that having regard to the fact that the plant has been in operation for nearly twenty years, the total amount in reserve account is smaller than it should be. He states further that the book value of the renewal fund does not apparently represent actual funds available for renewals or extensions as the moneys that have been set aside for renewals have been called upon for the retirement of bonds to the extent of $700,000.

Should a substantial amount be required for renewals, it will be necessary to provide such funds by issuing new bonds

$10,000,000.00. These funds are being procured out of mining that private is the freedom and during the year ending December 31st, 1964, $127,000.00 years ago rising.

Secrets for Security - "Security Department" p.47!

The company does on greatness not reminds for the years 1959 and 1960. There that day to be Gerhard Kiel, 1/1/, as amount of $1,741,000.00 for very difficult to his free, which limited in annual of $100,000.00 which was above in the amounts of the company as a credit balance for receipts at the rate of Rapidities annual Inc. 1977. There is an interesting analysis as to our actually-constructed his results, as the original books of account are not available. Our Investing Engineer states that based upon the best assets of the company, amounting to approximately $18,000,000.00, in which I- Lantana Airport/ship Ingrat of presently $4,500,000.00 or $7,000,000.00, that serving regard to the fact that the plans has been in operation for nearly twenty years, the total amount in reserve account is rather more it should be. It within further that the book value of the ex-servi free has not currently increased since their existing for removals or salvaging as the money that have been not held for reserve have been held upon for the equipment of more to the amount of $100,000.

Hence a substantial amount is required for reserve. It will be necessary to provide each Trade by Lantana and Tuan-

or some other means. In spite of the apparent inadequacy of the renewal reserve, the Commission, during the year 1921, made a further revision in the renewal rates which reduced the reserve above quoted by the amount of $379,289.19, leaving a balance of only $1,387,786.85. The reduction so made was applied. The reserve in future will be built up at a rate which is slower than the reduction above shown would at first indicate, in that the rates applicable to properties and lands of the Ontario Power Company have been revised from 1.85% to 0.75%. The rate of 2.85% formerly applying to the third pipe line has been entirely discontinued and the 3% per annum formerly used on properties, etc., of the Ontario Transmission Company have been reduced to 1.25%. The amount of the reduction was applied as a credit to sinking fund reserve on the third pipe line, a reduction of 1922 power costs, approximately$73,000 was credited to contingencies and an amount of $5,249.21 was credited to surplus account. Our Consulting Engineer in commenting upon this reduction stated as follows: "It is difficult to understand what advantage is to be expected from a further reduction in an already inadequate reserve for renewals." Mr. Francis further states: "It might be argued that the use of reserve for renewals to provide a fund for the retirement of outstanding bonds could be justified if it is the intention to scrap the plant of the Ontario Power Company, but in that case, it would seem reasonable that provision should be made to set aside a fund from revenues sufficient to pay all obligations before the plant will have lost its earning power."

ex post facto cases. In spite of the apparent inadequacy of the present reserve, the Commission, during the year 1913, made a further petition to the Legislature to increase the reserve state lands by the sum of $[illegible], leaving a balance of only $[illegible]. The reduction is much too stringent. The reserve in future will be built up at a much higher rate than the reduction which would of first instance, in that the rate applicable to Niagara and Lake St. Clair Power Company have been varied from [illegible] to [illegible]. The rate of [illegible] currently applying to the Niagara plus the Lake Erie-Niagara transmission and the St. Lawrence transmission would be [illegible], at the current transmission charge rate have reached in [illegible]. The course of the reduction was applied as a credit to planning issue reserve on the "Lake Erie line", a reduction of [illegible] which [illegible] was credited to construction and on which at $[illegible] was credited to surplus account. But investing Robinson in commenting upon this reduction stated, as follows: "It is difficult to understand what advantage is to be expected from a further reduction in an already inadequate reserve for renewals." Mr. Francis Parker stated: "It might be argued that the use of reserve for renewals to provide a fund for the replacement of outstanding plant could be justified if it is the intention to merely the plant at the Chippewa power Station, but in this case, it might also be argued that practically would to make to say that a fund from reserve utilized to pay all multi-plant values the plant will have lost its working power."

Sinking Fund Reserve - ("General Economics" - p.28)

A study of the operating accounts fails to show any direct provision from revenue for sinking fund to be used to retire bonds for the Ontario Power Company, and the Ontario Transmission Company, and it would appear that funds in the amount of $772,213 used in retiring certain bond issues have to a large extent been appropriated out of the reserve for renewals and that this account has been depleted to the extent of $725,000 at the end of 1922.

The total long term indebtedness of the company and the Commission in respect of the company, amounted to $25,405,676.72 at October 31st, 1922, and in addition to this amount $1,400,000.00 of the company's first mortgage bonds were pledged with the Bank of Montreal as collateral security for a loan of $1,200,000.00 to the Commission. This amount is included in the $3,514,676.62 of cash advances for the purposes of the third pipe line.

Deposits for sinking fund purposes have been made at the rate of $30,000.00 per year from 1918 to 1922, in respect of first mortgage bond issues of the Transmission Company, and an annual provision of approximately $150,000.00 has been

made in respect of bond issues outstanding against the Power Company.

The sinking funds available if continued on the same basis until maturity of the bonds will be inadequate for the retirement of the bonds at maturity in the amount of approximately $7,000,000.00, and a means of financing this deficiency will require to be provided before the bonds become due.

Reserve for Contingencies - ("General Economics" - p.32)

The company has not provided a reserve for contingencies on the same basis as provided by the Commission for other systems, where a charge of approximately 25¢ per horse-power per year sold is made together with certain other provisions. As of October 31st, 1922, the amount at the credit of this reserve was $527,684.30 which included, however, a provision for claims against the company, and if the company is obligated to pay the amount set aside for specific purposes there will remain only $72,935.36 to meet future contingencies of an unknown nature. Our Consulting Engineer states that it would seem wise to provide for some contingency funds in addition to that now set up on the books.

Results of Operation ("General Economics" -p.36)

As shown by the books of the Company at October 31st, 1922, revenue exceeded expenses in the amount of $59,197.03 after setting aside reserve for renewals, sinking funds and contingencies on the basis and in the amounts as previously shown.

It is to be noted that the operating results are contingent upon the ultimate settlement of outstanding claims. The Company is now operating on a "cost" basis, the Niagara System bearing all expense of operation excepting that met by revenue arising from other sources. The books of the Company show that the expense for the year 1922 amounted to $3,092,926.52, which amount is balanced by a total revenue in the same amount.

Revenues from Power Sold ("General Economics" -p.38)

Without taking into consideration the adjustment made in the renewal reserve subsequent to the close of the fiscal year ending October 31st, 1922, the total revenue from power sold increased from $2,198,421 in 1919 to $3,264,046 in 1922.

The revenue per horsepower from the various classes of customers and the various revenues for each classification per horsepower are as follows:

(a) Power sold to Hydro-Electric Power Commission has increased from $9.15 in 1918 to $17.55 in 1922.

(b) Power sold to private consumers has remained practically stationary, being at the rate of $12.82 in 1918 and $12.57 in 1922.

(c) Power sold for export has also remained stationary being $12.70 in 1918 and $12.84 in 1922.

From the above it will be noted that with the acquisition of the Company by the Commission the power users on the Niagara System have had their cost of power increased almost 100 per cent., but due to outstanding contracts, power to private customers and for export purpose has not been increased.

Operating costs of producing power have increased from $10.99 per horsepower in 1918 to $15.10 in 1922, showing a net increase of approximately 50%.

Dividends paid by the Ontario Power Company ("General Economics" -p.39)

The amount of $1,748,651.19 has been accumulated by the Company up to October 31, 1922, which was used to meet interest charges on the $8,000,000 4% 40-year debentures. Of this sum, $395.35 was paid as dividends to minority stockholders of the Company during the years 1918, 1919 and 1920.

Power Purchased ("General Economics" -p.40)

The Company has purchased power from the Toronto Power Company and the Canadian Niagara Power Company, in varying amounts, from 1918 to 1921. Power purchased from the

(a) Power sold at Kyle-Stewarton Power Commission has increased from $9.15 in 1910 to $17.00 in 1920.

(b) Power sold to private consumers has remained practically stationary, being at the rate of 22.40 in 1919 and 22.67 in 1920.

(c) Power sold for export has also remained stationary being 212.72 in 1919 and 212.96 in 1920.

From the above it will be noted that with the exception of the Company by its guarantee the power sold on the Niagara System have had their ups and downs always but yet.. but has to varying degrees. Power to private consumers and for export purposes has not been increased.

Operating expenses have increased from $12.44 per horsepower in 1910 to $19.14 in 1920, showing a net increase of approximately 50%.

Dividends paid by the Ontario Power Company ("General Statement" -p.20)

The amount of $3,742,421.12 has been appropriated by the Company up to October 31, 1920, which may need to meet interest charges on the $4,000,000 of debenture debentures. If this sum, $742,421 may yield an estimated 4% dividend, subject of the Company during the year 1920, 2112 and 1921.

Power Interests ("General Statement" -p.24)

The Company has guaranteed 100% for the Toronto Power Company and the Canadian Niagara Power Company, in accordance, two 1924 in 1924. Power purchased from the

Toronto Power Company cost the Company for fifteen months ending October 31, 1918, $663,421, and in 1921 it had decreased for that year to $258,905. Power from the Canadian Niagara Power Company was purchased at an average rate of $17.00 per horsepower, the total paid in this respect being $663,421 in 1918 and $569,291 in 1921.

When the Third Pipe Line was in operation, during 1920, the amount of power purchased was greatly reduced, costing the Company a total amount from both sources of $250,000 during that year.

Expenditures due to Accident ("General Economics" -p.40)

Up to October 31, 1922, total expenditures made on account of the accident amounted to $97,000, of which amount $64,000 was charged against renewal reserve, and the balance, $33,000, charged to operations during that year.

Taxes ("General Economics" -p.41)

The original company paid taxes in the amount of $16,000 a year to the City of Niagara Falls up to and including the year 1916. On the acquisition of the company by the Commission, and due to the termination of the agreement with the City of Niagara Falls, the assessment was increased by the City, and after various negotiations an agreement was reached whereby the Company has agreed to pay taxes in the amount of $98,657.42 for

Tarrytown Water Company (all the territory in Tarrytown Heights) during calendar 1919, 1920, 1921, and in 1922 it was increased the last year to $127,938. Under that the Tarrytown Heights Water Company was purchased at an average rate of $17.00 per assessment. The total data is that payment being $88,221 in 1919 and $127,121 in 1921.

When the Third Pipe Line was in operation, during 1919, the amount of water purchased was greatly increased, adding the Company a total amount from that source of $220,000 during that year.

Commissioner Jay Westcott (Tarrytown Department) -p.11)

On 14 October 21, 1922, total expenditures made on account of the aqueduct amounted to $97,000, of which amount $14,000 was charged against revenue, and the balance, $83,000, charged to appropriation during that year.

Table (Current Expenses" -p.11)

The original employed pay roll from 21 the amount of $18,000 a year to the City at Tarrytown in 19 and including the year 1919. In the negotiations of the agreement with the City of Tarrytown, the assessment was increased by the City, and after deducting the expenses of operation and other charges the Company was left with a net income of $19,287.18 for the year 1919.

the year 1921. The agreement reached stipulates that for a period of ten years from January 1st, 1922, the assessment shall be $2,500,000 and the rate thereon thirty mills on the dollar.

The Company, previous to its acquisition by the Commission, paid taxes in varying amounts depending upon the assessments placed upon it by the Township of Stamford, being in 1918, $1,300,000. In 1919 the taxes paid by the Company amounted to $7,966.59, and in 1922, $14,317.59. It is expected that a definite agreement regarding a fixed taxation will be arrived at in the near future.

Economic effect of the Accident on April 20th, 1922 ("General Economics" -p.43)

After reviewing the whole situation, our Consulting Engineer estimates that $300,000 would fairly represent the total cost of the accident to the Company.

GENERAL RELATIONS

Relations with Government ("General Relations -p.45)

It would appear that the Province of Ontario as parties to the agreement of purchase, wherein they guarantee the bonds issued by the Commission in respect of purchase and also guarantee performance of the agreement by the Commission, are directly responsible for the whole undertaking

the year 1923. The agreement reached stipulates that on a period of ten years from January 1st, 1923, the accounts must be $2,800,000 and the new charges thereafter will be $50 million.

The company, previous to its acquisition by the Canadian, paid taxes in varying amounts depending upon the assessments placed upon it by the township of Sherbrooke, being in 1922, $2,890,000. In 1923 the same year by the company amounted to $7,340,000, and in 1924, $24,027,000. It is expected that a definite agreement regarding a fixed taxation will be arrived at in the near future.

Immediate effect of the decision
on April 25th, 1923 ("Montreal Gazette" -p.10)

After carrying the whole situation over thoroughly the Canadian Pacific has 2000,000 which largely represents the total cost of the accident to the company.

Economy Statistics

Relations with Government ("Montreal Gazette" -p.10)

It would appear that the Treasurer of Ontario is prepared to the abandonment of Ontario, whereby they guarantee the funds issued by the Dominion to repay it provinces and also guarantee participation in the adjustment of the controversy, are extremely favourable for the whole undertaking

and have in effect assumed all the usual obligations of a purchaser. The Government have no direct control of the Company, the capital share stock of same being vested in the Commission who in turn has elected a board of directors from among its members and officials, in consequence of which they are in immediate control of the Company's operations, the Government having no direct voice in matters of administration. The Government's total liability to March 31st, 1923, in respect of the Company is in the amount of $23,091,000.00.

Relations with the Commission ("General Relations" -p.47)

As noted above the Commission, while named as purchaser in the agreement of sale and now holding the legal position of owner of the Company, has of itself no assets on which recovery could be made in case of default by the Company.

The Commission as owner of the capital share stock of the Company elected members and officials of the Commission as directors of the Company and paid certain of these salaries. Their action as shareholders and directors of the Company appears to be quite legal and valid, but as members and officials of the Commission their action was unjustified and improper.

Failure with the Company (General Liability - q.v.)

As noted above the Contractor, while named as purchaser in the agreement of sale and now holding the legal position of owner of the Property, has yet itself no assets to which recovery could be made in case of default by the Company.

The Commission as owner of the capital share that of the Company clearly matters and officials of the Commission as directors of the Company and paid partners of these matters. Their action as shareholders and directors of the Company appears to be quite legal and valid, but as members and officials of the Commission their action was unjustified and improper.

Relations with Municipalities ("General Relations" -p.54)

The municipalities in the Niagara System approved of a blanket resolution on January 1st, 1917, which in effect approved of the Commission obtaining power by construction of new developments, acquisition of operating companies or purchase of power. To this extent then the municipalities have concurred in and are liable for the Ontario Power Company. On a broad interpretation of the Ontario Niagara Development Acts of 1916 and 1917, it would appear that the municipalities are required to pay the cost of power from whatever source it is supplied. This would appear to include the Ontario Power Company. On the bases named above it would appear that the municipalities, if supplied with power from the Ontario Power Company, must pay cost for same, but in order to avoid any misunderstanding in the matter, especially in the event of the Ontario Power Company ceasing to operate, the operations of the Company should be placed under the provisions of the Power Commission Act and the capital share stock thereof, owned by the Commission, declared as "Works" of the Commission under the Power Commission Act and the Ontario Power Company made part of the Niagara System.

Relations between the Commission and the Company prior to Purchase (Gen'l Relations -p.60)

It is to be noted that the original agreement entered into between the Commission and the Company called for the delivery of a maximum of 100,000 h.p. at a rate of $9.00 per horsepower at 12,000 volts, up until the year 1950. As noted herein the Niagara System is now being charged on the basis of $17.55 per horsepower, which on the basis of 100,000 h.p. per year represents a loss of $855,000 a year to consumers in the Niagara System.

Reasons given by Commission for Purchase ("General Relations" -p.61)

Several reasons were given by members and officials of the Commission, but it would appear that the real reason for purchasing the Company was to obtain control of the water diverted by the Company from the Niagara River, and other franchise rights granted to the Company. Having regard to the development of power under the Queenston-Chippawa scheme and the apparent necessity of other schemes of similar magnitude, it would appear that the Commission's desire to obtain control of the Company on this account was well founded.

Reasons given by Commission for building Third Pipe Line ("General Relations" -p.66)

It would appear that when the construction of this work was under consideration power demands in the district were greatly in excess of the supply, and the Commission

maintain that the Government considered it the duty of the Commission to supply additional power by whatever means were possible. It would appear that it was on the basis of shortage of power the Third Pipe Line construction was undertaken.

Comparison of Cost of Construction of Third Pipe Line with Estimated Cost of same. ("Gen'l Relations" -p.67)

As noted, according to the minutes of the Commission dated December 20th, 1917, Mr. Gaby reported that 50,000 additional horsepower could be obtained by the expenditure of $1,806,000. This work as of October 31, 1922, had actually cost $3,515,094.93, representing an increase of almost 100 per cent. While the Commission's engineers give a great variety of reasons for such increase it would appear that little detailed study of the project was made before construction operations were commenced, such as would have been given to the problem by a contractor were he required to quote a lump sum tender for the work. Undoubtedly the conditions under which the work was carried out were far from ideal, but apart from unforeseen contingencies which arose, many of the items of expenditures should have been foreseen inasmuch as considerable work of this nature had previously been carried out in the same vicinity.

[illegible]

[illegible]

[illegible]

Conclusion

While not referred to specifically in the foregoing, there appears to be no formal agreement between the Commission and the Company with respect to the sale of power by the Company to the Commission. It would appear to be advisable that the operating relationship between the company and the Commission should be set forth so that a direct line of responsibility may be clearly defined and properly understood.